# THE BOOK OF VERMONT MARBLE

EALES, COHEN & BENNETT,
ARCHITECTS. — PERTH.



The Marble Bridge at Proctor, Vt.
Harry Leslie Walker, Architect

# THE BOOK OF
# VERMONT MARBLE

*A Reference Book*
*for the Architectural Profession*

*Second Edition*

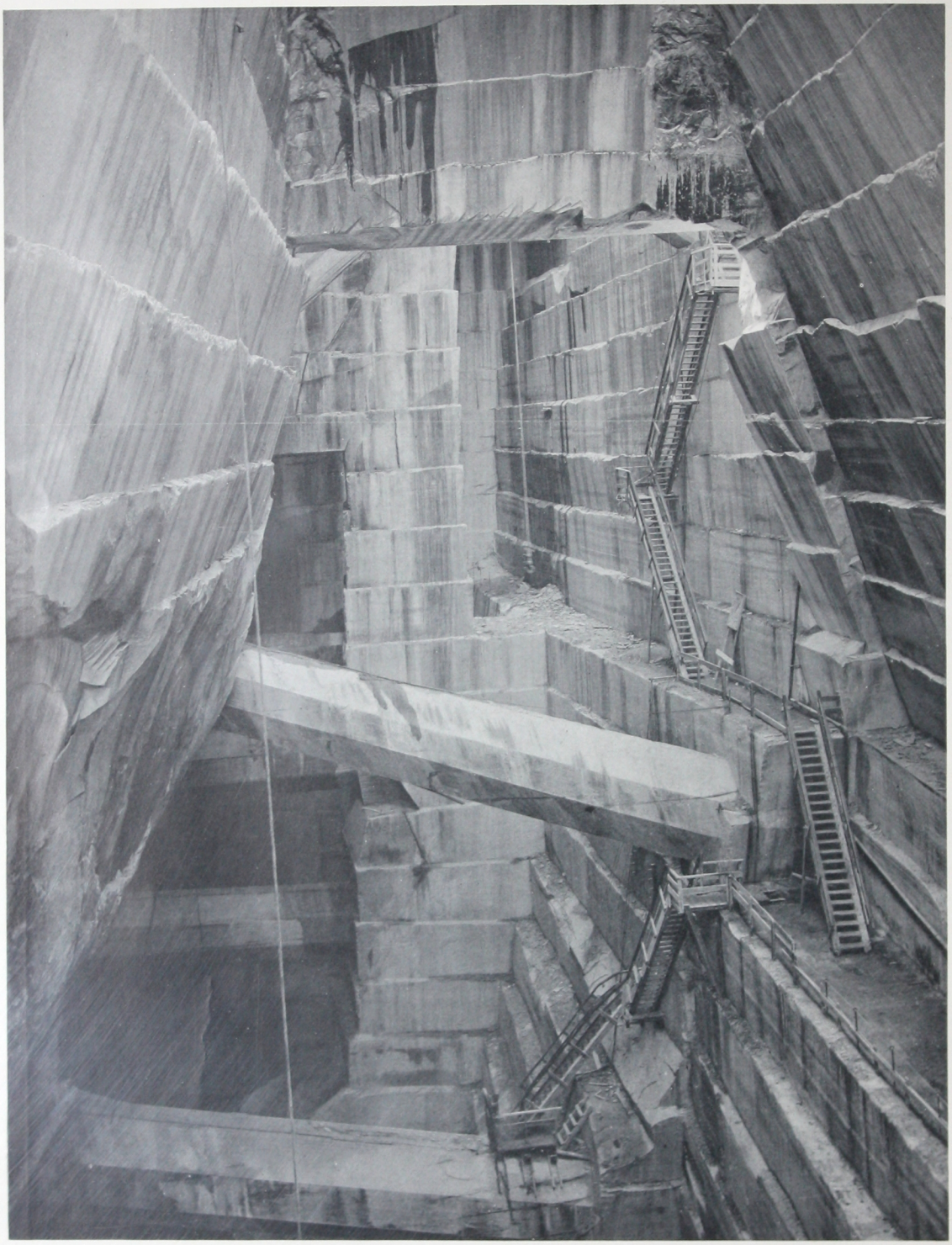
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*Architects are invited to visit the special exhibit of finished marble at our New York Office in the Architects Building, 101 Park Avenue*



In the Pittsford Valley marble quarry, looking down on the concrete struts—huge protective braces which ease the burden of the flaring walls. For further description of this opening, see page 9

# FOREWORD

FOR nearly a century Vermont marble has been on the market for building purposes, and during that time has been used for the construction and decoration of many notable buildings. The beauty and durability of its many varieties will continue to commend it for any type of structure where the idea of permanence and utility must be maintained without any sacrifice of artistic effect.

To translate his wishes and those of his clients into terms that may be understood by the marble producer is the architect's problem. To help in the solution of that problem, the subject matter on the following pages has been prepared.

It will continue to be our aim to render such service as will justify your confidence and that of your clients, and to add that personal interest so essential to the proper execution of artistic work.

VERMONT MARBLE COMPANY

## Geology of Marble

ALL marbles (in actual use) belong to the general class of limestones, as distinguished from other classes of rocks, but not all limestones can be used as marble. All true marbles are more or less metamorphosed, that is, they have been recrystallized and are on that account more dense and compact and substantial than are limestones that have not undergone such change. (Only occasional very compact, fine grained unmetamorphosed limestones, sufficiently dense to take a polish, can be used as marble.) In the least metamorphosed varieties fossils and other primary features are likely to be preserved. In the true metamorphic marbles such primary structures are usually obscure or are wholly destroyed.

There are many kinds of marble. The chief chemical varieties recognized are calcite marbles, dolomite marbles and serpentinous marbles, but in all of these there are additional variations in color and texture and structural detail which give great range or difference of appearance and architectural or decorative effect.

The calcite marbles are almost pure lime carbonate rocks, the dolomite marbles carry a high percentage of magnesium carbonate and the serpentinous marbles carry abundant silicates crystallized with the carbonates.

The Vermont marbles belong to the calcite variety and are thoroughly metamorphosed. They are typical marbles in every respect.

The blue, gray and black colors in marble are generally due to the presence of carbonaceous material and minute amounts of other dark constituents, and the brighter colors, such as green, red and brown, are chiefly due to iron in some form, or to silicates containing iron and other metals.

The difference in texture is in large part dependent on the degree of metamorphism; and the other structural features are generally due to the amount and kind of deformation that the rock has undergone during its folding and the rest of its mountain history.

The original limestone deposit was formed ages ago as a series of beds beneath the sea, produced in all probability by lime-secreting animals. Subsequently they were raised above the sea and became a part of the continent, and, in the course of time, through pressure and mountain folding with heat and some deep-seated igneous influence besides, these beds were transformed into their present crystalline condition.

Stream erosion and glaciation have removed the uppermost portion of the arches of the great folds belonging to the original mountains, so that the deposits now worked are remnants of the continuous beds that once existed here. These beds now constitute one of the most important marble deposits of the world.

## Chemical Composition

A CHEMICAL analysis of Danby Vermont marble, a typical variety, and the one most generally used for exterior purposes, shows the following results:

| | |
|---|---|
| Carbonate of Lime | 98.67 |
| Carbonate of Magnesium | 0.52 |
| Sulphate of Lime | Trace |
| Silica | 0.65 |
| Alumina and Oxide of Iron | 0.20 |
| | 100.04 |

## Physical Properties of Marble

TESTS made by the United States Bureau of Standards show Vermont marble to have an ultimate crushing strength varying from 11,000 to 22,000 pounds to the square inch.

As a fire resistant, marble has no equal among building stones. Tests conducted by the New York Underwriters are reported by them as follows:

"Taken as a whole, the heat-resisting capacity of building stone stands as follows: (1) marble; (2) limestone; (3) sandstone or freestone; (4) granite; (5) slate; (6) conglomerates."

It has been proved that Vermont marble may be subjected to a heat of 1200 degrees Fahrenheit without injury.

Vermont marble is hard, dense and non-absorbent. Tests made by the United States Bureau of Standards show that Danby Vermont marble, the grade generally used for exterior purposes, absorbs only about one-tenth of one per cent by weight when immersed in water. The weight of marble is approximately 170 pounds per cubic foot.

The coefficient of expansion of marble is a good deal less than that of steel and concrete, the two materials with which it most often comes in contact. With reference to the expansion of marble, the United States Bureau of Standards is authority for the following statement:

"The expansion of marble, as well as that of other types of stone, has been found to vary considerably from that of straight-line expansion of the metals, and for different samples of marble at ordinary temperatures the range appears to be from one-fourth to two-thirds that of steel. As the temperature increased, the rate of expansion increased and the curve probably becomes steeper until the point is reached where the chemical composition of marble is changed. Another peculiarity in the expansion of marble is that when once expanded by heat it does not entirely contract to its original dimension but retains a part of the increase after the specimen is cooled."

## Marble Quarrying Methods

MOST Vermont marble deposits occur in beds or layers, each one of which has its own individuality in color and other characteristics, including decorative pattern. Because of these differences, individual beds are usually quarried separately.

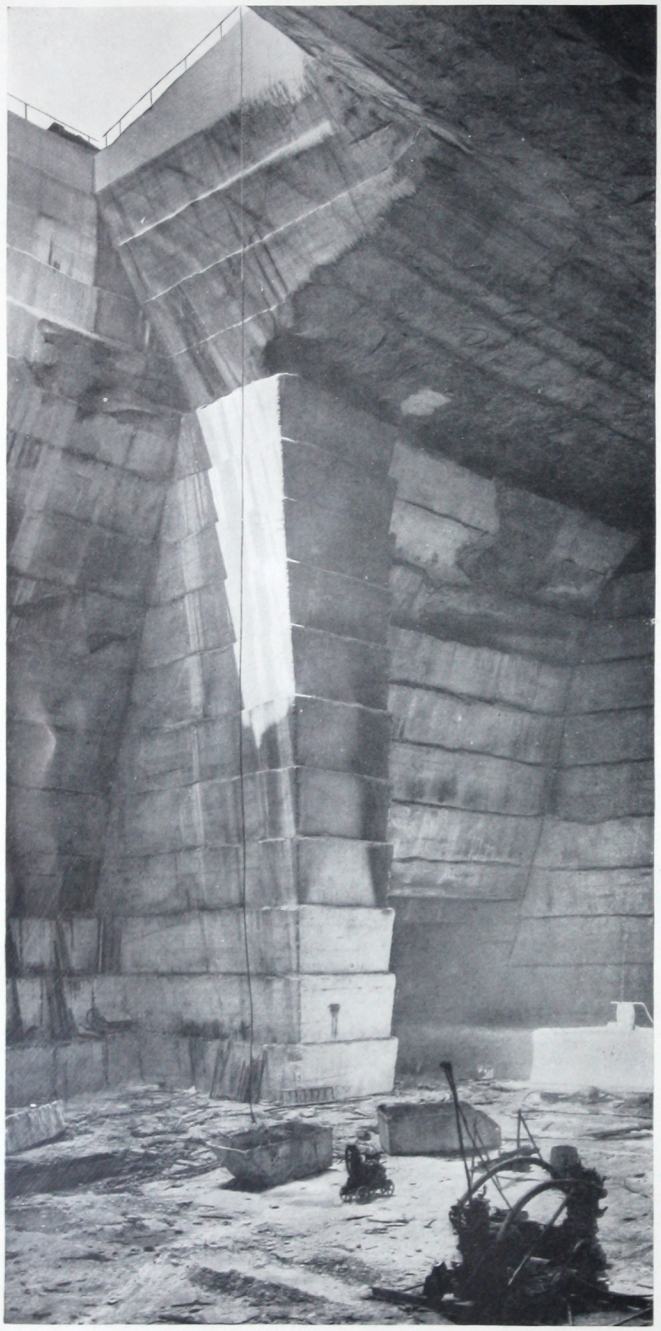
At the surface the layers usually outcrop in an almost vertical position. The Danby deposit, where the layers outcrop on the side of a steep hill, in a nearly horizontal position, is a notable exception. At West Rutland, at a depth of about 225 feet, the deposit becomes thinner, the layers turn and proceed under the hill at an angle of about 30 degrees with the horizontal.

Before quarrying operations at any point are started, prospecting is done by means of diamond-core drills and by cleaning and examining the surface outcrop. In spite of these precautions, the opening of a quarry is attended with considerable financial risk.

In quarrying marble, blasting cannot be resorted to on account of the danger of shattering the blocks. The electric channeling machine, running on movable tracks on the floor of the quarry, first makes a series of vertical cuts or channels to the required depth. The first strips of blocks, known as key blocks, must be cut on all four sides. After these are wedged out and removed the remaining strips are channeled on two parallel sides only. A drill placed in the keyway drills horizontal holes between the layers and at the bottom of the cut. The blocks are then broken off by wedges. All quarrying machinery is operated by electricity, and powerful electric lights make the tunnels as light as day.

At West Rutland, where the vein has been followed under the hill, electric railways carry the blocks to a point where they can be reached by the surface derricks.

Most of the quarries being in tunnels, operations are carried on through the entire year and there is a practically constant supply of blocks.



## America's Most Famous Marble Deposit

THE accompanying view is from the stairway leading into the so-called "Wellhole," a comparatively recent opening on the West Rutland vein. At the top may be seen the small opening through which the blocks are raised to the surface.

Quarrying on the West Rutland deposit began about the year 1844. The results at first were not encouraging from a financial point of view, and, in fact, it took over thirty years to bring the West Rutland quarries to a satisfactory state of development.

In recent years, from 400,000 to 600,000 cubic feet of marble have been removed each year, and there is still an almost unlimited quantity available.

Not counting the various grades of blue marble which lie to the west of the white deposit at West Rutland, this remarkable vein produces fifteen different grades of marble for monumental and interior building purposes. These range from the almost pure white of Extra White Rutland to the dark greens such as Verdoso and Olivo.

## Overcoming Nature

THE obstacles that have been surmounted in the Pittsford Valley quarries at Florence, Vermont, are suggested by the illustration facing the Foreword of this book. Following a comparatively narrow vein of marble to a depth of 320 feet, the tremendous lateral pressure held in check by immense reinforced concrete struts, these quarries present to the architect and engineer one of the most interesting developments of the Vermont region.

The Pittsford Valley quarries produce large quantities of stock for cemetery memorials and several varieties of interior and exterior marble. The quarries are notable for the large sizes which are obtainable. Blocks for monolithic columns measuring 32 feet long and over four feet square have been readily secured, the hoisting of pieces of this size being the major problem. A 63-ton block about 14 feet square and three feet thick, which was especially quarried for the Scott Memorial Fountain, is illustrated on page 29.

For the Bridgeport Savings Bank, Bridgeport, Conn., the Pittsford Valley deposit furnished two of the largest caps ever finished in Vermont marble, each containing 117 cubic feet. The pilasters for this structure were made up in three sections, the volume of each piece being about 116 cubic feet. One of the blocks quarried for Bridgeport weighed 52 tons, another 55 tons.

## Vermont Verde Antique

THIS product, which has come to be the standard dark green marble of America, was first put upon the market about 1850. The original quarry, located at Roxbury, Vermont, practically the geographical center of the state, was operated in only a limited way until 1893. The earlier methods were crude in the extreme and the quantity of marble produced was very small in comparison to the present demand. That Vermont Verde Antique has continued to grow in favor is evidenced by the fact that the quarry production in 1924 was over twelve times that in 1901. During the last ten years several new quarries, all in central Vermont, have been developed.

Vermont Verde Antique occurs in isolated masses which, roughly, are of the shape of a double-convex lens standing on edge. The marble is of such extreme hardness that the quarrying presents a difficult problem. The machinery is the same as that in use in other quarries but specially tempered cutting steel must be provided.

The finishing of Vermont Verde Antique also presents an unusual problem. The bulk of this work is done at an especially designed and equipped plant at Swanton, Vermont. There at the lower falls of the Missisquoi River, where water power is available, are twenty-four saw gangs and a large finishing plant.

The weathering qualities of Vermont Verde Antique are superior to those of any other marble on the market. For the modern shop front where beauty and utility must be combined, it is a most satisfactory choice.

## The Pioneer Marble

THE most exacting as well as the most convincing test that can be applied to any building stone is the test of time. The early settlers in the vicinity of Danby Mountain discovered its deposits of marble and from the outcroppings in the valley split off pieces for memorials to their dead. Headstones bearing dates as early as 1765 are still standing, their crude lettering sharply defined in spite of the passing of the years. In 1836, at Erie, Penn., there was erected from the Danby quarries the first marble public building of which there is any record. Constructed originally by the United States Bank of Pennsylvania, it was



Quarries and Cable Road, Danby, Vt., as they look from the other side of the valley

purchased by the Government in 1850, and is now used as a Custom House. It is still well preserved.

As the demand for marble increased, quarries farther up on the mountain side were developed, the blocks at first being drawn down by teams. This crude and dangerous method of handling finally gave way to an inclined railway, operated by immense cables. The steam cutting machines which were first used were replaced by modern electric channelers, and there was finally evolved the remarkable quarry development pictured above.

Tunnels have pierced the mountain to a distance of 400 feet, and lateral branch tunnels have been added until upwards of half an acre of quarry floor, with an average depth of 30 feet, is now producing blocks. The quantity production of marble whose quality has been proven by over a century of use is now possible.

## Other Vermont Deposits

OTHER Vermont quarries, each producing its own distinctive types of marble, are being operated by the Company at Proctor, Florence, Brandon, Swanton and Isle La Motte. Brief descriptions of the more important varieties are presented in another part of the book.

## Outside Quarries

IN addition to its operations in its home state and the quarries at Bluff Point, N. Y., the Vermont Marble Company has extensive holdings in Alaska.

The Alaska quarries are in the general vicinity of Prince of Wales Island, off the coast of British Columbia. Work there was started in 1908 and a considerable quantity of marble was put on the market the following year. The quarrying season lasts from February until December. Additional property in Alaska was acquired in 1920 so that patent is now held on upwards of 2,800 acres of marble claims.

Blocks are shipped by boat to the Vermont Marble Company's plants at Tacoma and San Francisco where sawing and finishing are done. A storage of blocks is maintained at Tacoma and blocks for the eastern trade are shipped from that point.

The Alaska quarries at present produce Tokeen and Gravina marbles. These are very hard, take a splendid polish and have been extensively used for interior work.

## Block Storage

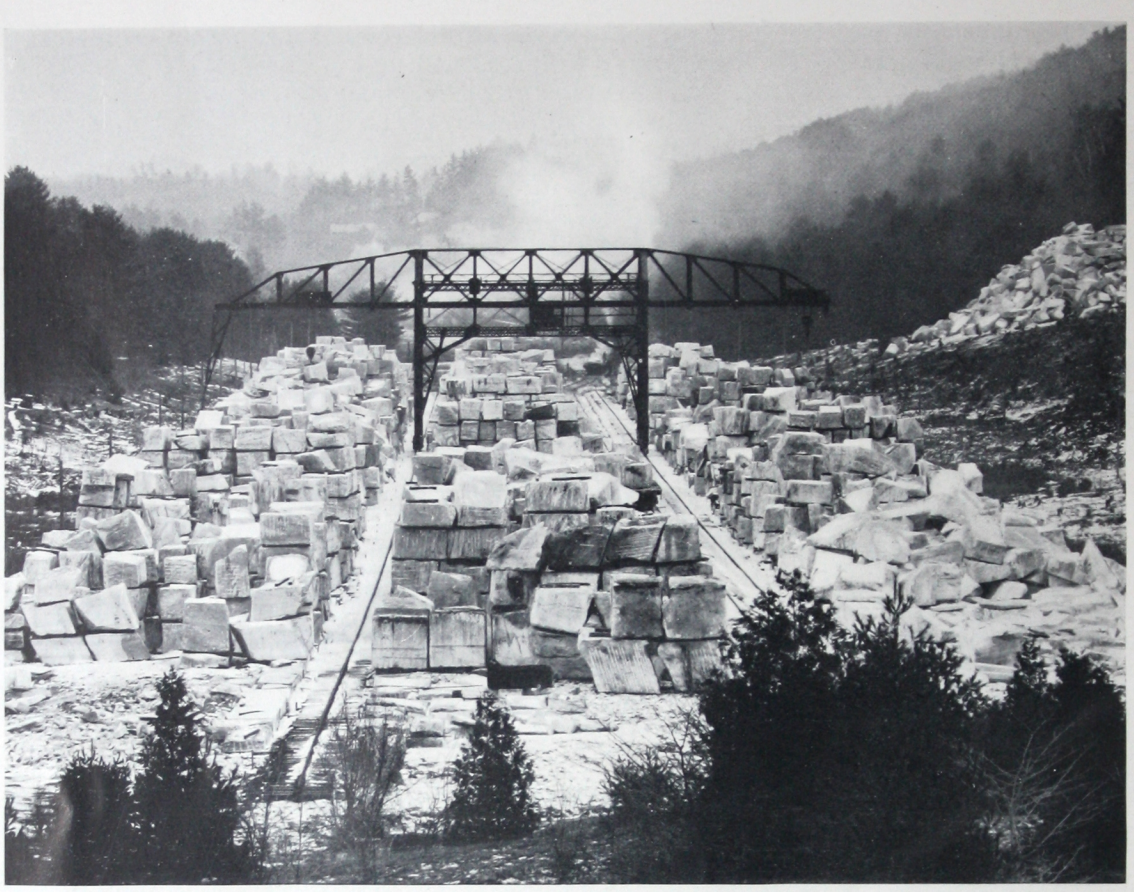
IT is rarely feasible to quarry just what blocks are required for current orders. Economy of operation usually requires that each quarry floor be entirely removed, and blocks not needed for immediate sawing are sent to the storage piles. By this method quarrying can proceed without interruption and at the same time a large reserve supply of blocks is built up. The several storage yards of the Vermont Marble Company always contain upwards of 15,000 blocks.

## Mill Operations

THE sawing capacity of the Vermont Marble Company in Vermont consists of over three hundred gangs. These are operated entirely by electricity and, except for the period



Quarry at Tokeen, Alaska



Proctor Storage Crane where approximately 8000 quarried blocks are piled

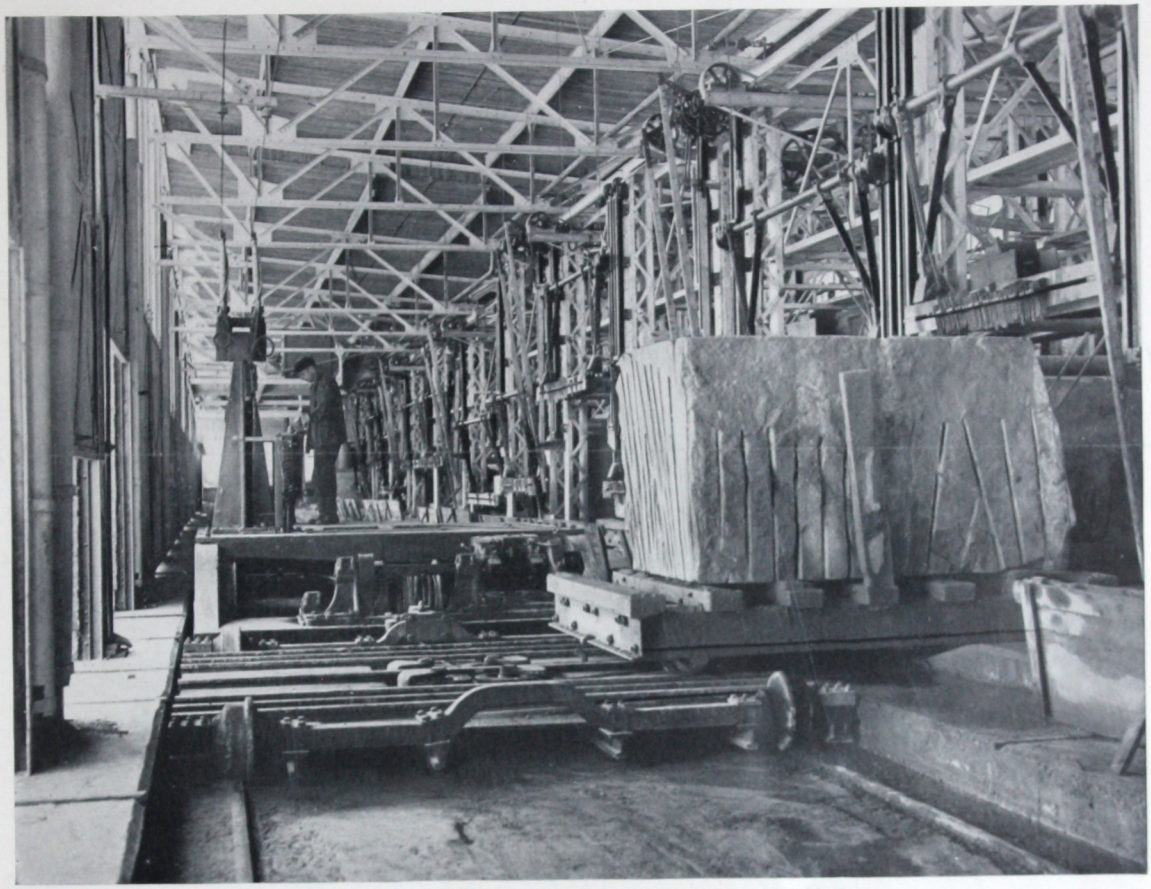
when they are stopped for filling or for repairs, swing without ceasing, from midnight Sunday night to midnight Saturday night, every week in the year.

Each gang consists of a steel frame suspended from above with an arm reaching back to machinery in the rear which gives it a swinging motion. The frame is arranged so that sawblades, which are plain bands of rather soft steel, can be tightly stretched from front to rear. A mixture of sand and water flowing on the block from above furnishes teeth for the saws. A suitable apparatus feeds the gang of blades as the sawing progresses.

In all modern mills there is a car under each gang to carry the block or slab which is being sawed. As soon as the block is sawed down, it is pulled out by power and another car, carrying a new block, is rolled under the gang. The sawed slabs go direct to the finishing shops, or, if there are no orders for the particular grade, to storage yards. Many blocks produce marble of several different grades.

## Transportation Facilities

THE main plants and quarries are linked together by the Clarendon & Pittsford Railroad. This railroad uses five locomotives and has 24 miles of track. It is of standard



Interior of Mill 19, showing electric locomotive for handling blocks

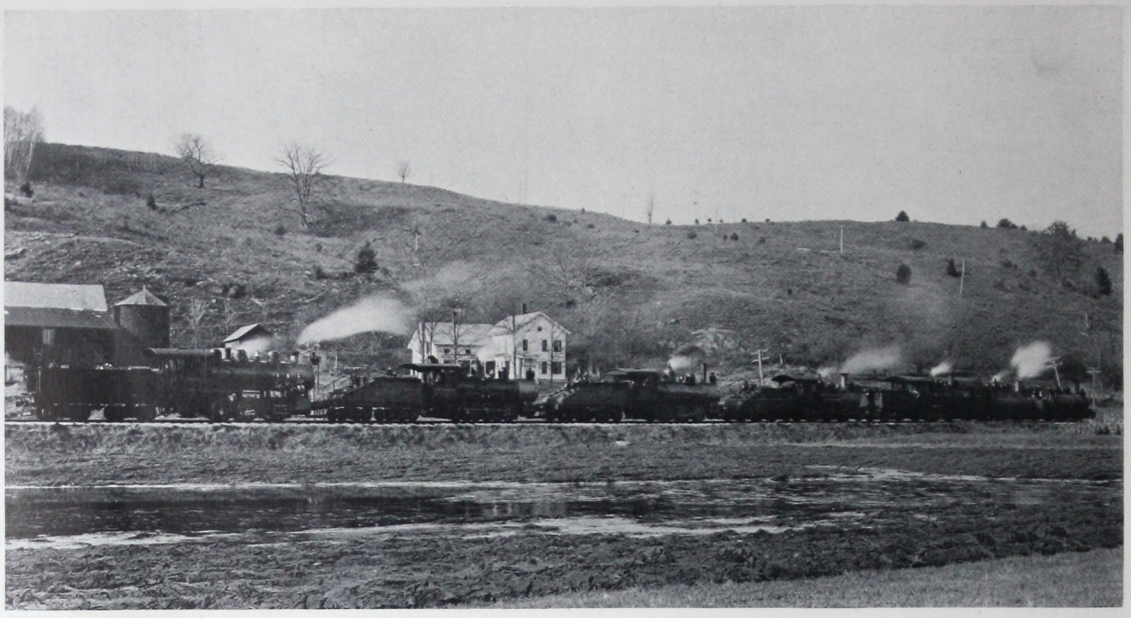
gauge and has 225 cars in constant operation, in addition to such foreign cars as are on its lines being loaded with outgoing marble.

Connection is made with both the Rutland Railroad and the Delaware and Hudson.

## Stains on Marble

THE presence of stains on marble does not indicate impurities in the stone, but that the marble has been, or possibly is still, in contact with some foreign substance. Nearly all stains will yield to treatment if it is applied promptly and persistently. The subject of stains on marble has been carefully studied by the Research Department of the Vermont Marble Company and our booklet on the "Care and Cleaning of Building Marble" will be furnished on request. The following general information will be found helpful.

Oil stains are light yellow. On polished marble pure naphtha or high grade gasoline applied on clean cotton waste is helpful. On floors, or exterior marble, a poultice of hot lime is usually successful. Bad spots often yield to a poultice of hot lime over an application of chloride of lime. Obstinate stains may require several applications extending over a period of days.



Motive power of the Clarendon & Pittsford Railroad

Pink or red brown stains come from lumber, leaves or some organic matter. Sometimes, especially on exterior marble, they do not appear until the marble is set. The stain does not penetrate deeply and will disappear on exposure to the weather. The process may be hastened with Javelle water or chloride of lime.

Rust stains are hard to remove. If on the surface and due to cinders or nails in boxing, they may usually be rubbed off or will disappear in a short time. If the stains are due to some metal in connection with the marble it is useless to treat them until the cause is removed.

Removal of ink stains, tobacco stains, urine stains, etc., is fully explained in the booklet already mentioned.

## Care of Marble

OWNERS and occupants of new buildings are usually rather careful of the paint and woodwork. Even the metal fixtures are at first given solicitous rubbing. The marble, however, is frequently left to look out for itself. Indeed, the impression seems to be quite general that marble can stand without cleaning amid the dirt of the modern city, retaining its original beauty in spite of constant soiling. On the other hand those who attempt to do the right thing frequently injure the marble by giving it the wrong kind of treatment.

It is to remedy these conditions and to promote a better appreciation and more intelligent care of marble that we have issued a booklet giving rules and instructions. This, with a condensed card of instructions for janitors, will gladly be furnished upon request.

Polished interior marble deserves frequent cleaning. Dust and grease will collect on the surface and if not removed will result in a cloudy film and cause discoloration. Systematic dry cleaning with a soft cloth is advisable. A mild alkali in the cleaning water will help materially in keeping marble fresh. Polished marble should be wiped dry after wet cleaning.

Marble floors and treads must be mopped or scrubbed regularly with an abrasive cleaning powder which is free from caustic and lye, and which will neither grind nor scratch. In sweeping marble floors avoid prepared sweeping compounds and oil mops.

The mellowing influence of time is a great beautifier of architectural work. In the process of weathering, the cold and dazzling whiteness of freshly cut stone takes on an atmosphere of antiquity and warmth that is greatly to be desired. Buildings may be robbed of a distinct part of their charm and dignity through the laborious process of cleaning. Be sure, therefore, that the building actually needs cleaning and will be improved thereby.

Exteriors may be scrubbed with a good fiber brush and abrasive cleaning powder, rinsing thoroughly thereafter. We do not recommend the use of sand blast for cleaning marble. It has a tendency to ruin delicate mouldings and to open pores and remove that crust which forms on all seasoned stones as nature's own preservative.

Our cleaning booklet gives specific instructions for treatment of marble that has suffered from long neglect or misuse. By this method marble interiors that have been installed for 25 and 30 years are restored to their original beauty and charm at a slight expense.

Avoid the use of soap, soap powders, soft soap and caustic cleaners. Never use acid.



Three hundred and fifty feet underground. Electric railroad in West Rutland quarry



A striking testimonial to the enduring qualities of Vermont marble. The Security Bank, San Francisco, after the great fire

## The Final Test

TESTS and analyses are not without value but after all the real worth of a stone can only be determined by practical experience. In the bank which is illustrated on this page there is indisputable evidence of the strength and durability of Vermont marble. Adjoining buildings of brick and stone were ruined by the intense heat but the Security Bank remained intact.

The Second National Bank of Paterson, N. J., another Vermont marble structure, came through the great fire of 1903 without injury. Here again the surrounding buildings crumbled under the strain.

In the flood of 1913 the Vermont marble interior of the City National Bank, Dayton, O., was subjected to an unusual water test. Although it was submerged for three days, all that was needed to restore it to its original condition was a little cleaning.

Such cases prove in a most conclusive way that Vermont marble is dense, non-absorbent, and hence little affected by the weather — that it has ample strength for any structural purpose — and that as a fire resistant it has no equal. Not only is it one of the most beautiful of nature's building materials, lending itself to all that is best in architecture and sculpture, but it holds within itself the equally rare qualities of stability and permanence.

## Grades of Exterior Marble

MOUNTAIN WHITE. A hard, white marble quarried at Danby. A very high grade product.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| Memorial Amphitheatre | Arlington, Va. | Carrere & Hastings, Architects. |
| Adirondack Trust Co. | Saratoga Springs, N. Y. | Alfred Hopkins, Architect. |
| Red Cross Building | Washington, D. C. | Trowbridge & Livingston, Architects. |
| County Court House | New Haven, Conn. | Allen & Williams, Architects. |
| Senate Office Building | Washington, D. C. | Carrere & Hastings, Architects. |
| Traders National Bank | New Haven, Conn. | Mowbray & Uffinger, Architects. |
| Public Library | Detroit, Mich. | Cass Gilbert, Architect. |
| International Trust Co. | Denver, Colo. | Mowbray & Uffinger, Architects. |
| Winthrop Gardens | Lenox, Mass. | Carrere & Hastings, Architects. |
| Borden Residence | Syosset, L. I. | Delano & Aldrich, Architects. |
| Davis Mausoleum | Woodlawn, N. Y. | F. B. Hoffman, Architect. |
| Glens Falls Fire Ins. Co. | Glens Falls, N. Y. | Geo. B. Post & Sons, Architects. |
| Schinasi Residence | New York City | Wm. B. Tuthill, Architect. |
| Oliver Ditson Building | Boston, Mass. | Townsend, Steinle & Haskell, and C. Howard Walker, Architects. |

IMPERIAL. A hard marble with white background and a small amount of veining. Quarried at Danby.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| Colony Club | New York City | Delano & Aldrich, Architects. |
| Curtis Publishing Co. | Philadelphia, Pa. | Roberts & Co. and Edgar Seeler, Architects. |
| G. A. R. Memorial | Topeka, Kans. | Charles Chandler, Architect. |
| Guaranty Trust Co. | Lancaster, Pa. | C. Emlen Urban, Architect. |
| Carpenter Library | Manchester, N. H. | Edw. L. Tilton, Architect. |
| Forsyth Dental Infirmary | Boston, Mass. | E. T. P. Graham, Architect. |
| State Capitol Wings | Boston, Mass. | Andrews, Chapman & Sturgis, Architects. |
| Winthrop M. Crane Residence | Dalton, Mass. | William Adams, Architect. |
| Phœnix Insurance Co. | Hartford, Conn. | B. W. Morris, Architect. |
| Trenton Banking Co. | Trenton, N. J. | Dennison & Hirons, Architects. |
| Hershey Trust Co. | Hershey, Pa. | C. Emlen Urban, Architect. |
| Wilbur Theatre | Boston, Mass. | C. H. Blackall, Architect. |
| Scott Memorial Fountain | Detroit, Mich. | Cass Gilbert, Architect. |
| Berkshire Savings and Trust Co. | Pittsfield, Mass. | Holmes and Winslow, Architects. |

HIGHLAND. Quarried at Danby. A hard, light marble carrying considerable color.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| St. Lawrence Co. National Bank | Canton, N. Y. | J. Mills Platt, Architect. |
| Girard College Armory | Philadelphia, Pa. | John T. Windrim, Architect. |
| Monument to Music | Providence, R. I. | Bellows & Aldrich, Architects. |
| Ellis College Cottages | Newton Square, Pa. | John T. Windrim, Architect. |

CORONA. Quarried at Proctor and Florence, Vermont. A hard, white marble carrying some color.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| U.S. Post Office | Bennington, Vt. | Oscar Wenderoth, Supervising Architect. |
| Lehigh Valley Trust Co. | Allentown, Pa. | Ruhe & Lange, Architects. |
| Union Central Life Building | Cincinnati, Ohio | Cass Gilbert, Architect. |
| Exeter Academy Building | Exeter, N. H. | Cram & Ferguson, Architects. |
| U.S. Post Office | Pittsfield, Mass. | James Knox Taylor, Supervising Architect. |
| Riggs (Albee) Building | Washington, D. C. | J. H. De Sibour, Architect. |
| Untermeyer Garden | Yonkers, N. Y. | W. W. Bosworth, Architect. |
| Zimmerman Residence | Somerset, Pa. | Horace Trumbauer, Architect. |

EUREKA. A marble similar to Corona but carrying more color.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| Citizens Trust Co. | Patchogue, L. I. | Morrell Smith, Architect. |
| Wolf Hall, Delaware College | Newark, Del. | Day & Klauder, Architects. |
| U.S. Post Office | Asbury Park, N. J. | James Knox Taylor, Supervising Architect. |
| Davis Library | Exeter, N. H. | Cram, Goodhue & Ferguson, Architects. |
| U.S. Post Office | Greensburg, Pa. | James Knox Taylor, Supervising Architect. |
| Cooperstown Hospital | Cooperstown, N. Y. | Frank P. Whiting, Architect. |
| Toledo Museum of Art | Toledo, Ohio | Edward B. Green & Sons, Architects. |
| Merchants National Bank | Manchester, N. H. | C. R. Whitcher, Architect. |

FLORENCE. A hard, very even marble of blue shade; quarried at Florence, Vermont.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| Women's College | Allentown, Pa. | Ruhe & Lange, Architects. |
| U.S. Post Office | Connellsville, Pa. | James Knox Taylor, Supervising Architect. |
| Durham Bank | Durham, N. C. | Ellicott & Emmett, Architects. |
| Garlick Residence | Youngstown, Ohio | Chas. A. Platt, Architect. |
| Girard College High School | Philadelphia, Pa. | John T. Windrim, Architect. |
| Gross Mausoleum | Sunbury, Pa. | E. C. Rogers, Architect. |
| Lewistown Trust Co. | Lewistown, Pa. | Paul A. Davis, Architect. |

PLATEAU. A very hard gray and white marble quarried at Dorset; of very even color and texture.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| U.S. Rubber Building | New York City | Carrere & Hastings, Architects. |
| Infants' Hospital | Boston, Mass. | Shepley, Rutan & Coolidge, Architects. |
| Museum of Art | Montreal, P. Q. | Eugene Payette, Architect. |
| Continental Memorial Hall (Columns) | Washington, D. C. | E. P. Casey, Architect. |
| Telephone Building | Providence, R. I. | Clark & Howe, Architects. |

GRAY VERMONT. An even gray marble quarried at West Rutland. Often employed for rock face work.

EXAMPLES OF ITS USE

| | | |
|---|---|---|
| Community Mausoleum | Niagara Falls, N. Y. | Green & Wicks, Architects. |
| St. Ann's Church | Fall River, Mass. | Napoleon Bourassa, Architect. |
| Chemistry Building | Middlebury, Vt. | W. Nicholas Albertsen, Architect. |
| St. Mary's Church | Troy, N. Y. | M. F. Cummings & Son, Architects. |
| High School Addition | Chester, Pa. | Clyde S. Adams, Architect. |
| Girard College Armory | Philadelphia, Pa. | John T. Windrim, Architect. |

## Finishes of Exterior Marble

Sand Finish. This finish is the one most commonly specified. It brings out to the greatest degree the natural veining of the marble. It is put on by rubbing the stone by hand, using coarse sea sand.

Tooled Finish. Where a rougher finish is desired, tooling is often specified. The work is done by hand or by a special tool used in the planer. In either case the effect is that of a slightly corrugated surface. The lines are continuous and are regularly spaced.

Axed Finish. This is also known as hammered finish. It is the usual granite finish. It is distinguished from tooled finish by the fact that the lines are finer, nearer together and somewhat irregular.

Chisel Finish. This is a special finish put on with the pneumatic tool. Designed as it is for monumental work, it is not adapted to large structures. It is recommended, however, for mausoleums or other memorial work.

Rock Face. This, as the name implies, is a very rough finish. After the pieces are sawed, the faces are split off by hand, leaving the stone with its natural surface. The work is done in such a way as to leave the stone somewhat thicker at the center than at the beds and joints.

## Finishing Methods

EACH piece of exterior marble, after having been sawed as near to size as is practicable at the mills, goes to the finishing shop. Here it is first brought to the exact size by the rubbing bed. This is a large revolving plate of cast iron, sand and water being fed on to it from above. The block, one face at a time, is brought into contact with the top surface of the bed and ground down by the abrasive action of the sand.

After coming from the rubbing bed, the piece, if it is to be cut by hand, is carried by an overhead crane to the workman. A pattern is applied, and the piece brought to the required form by the use of the pneumatic tool.

Pieces to be moulded first go to the cutter also and are "set in"—that is, the mould is cut in by hand for an inch or so at both ends of the piece. They then go to the planer, where, by means of a tool shaped to the reverse of the moulding, the intervening stone is plowed out. A special attachment also permits the planing of circular work if of fairly large radius. Suitable lathes are provided for the turning of columns and bases. One lathe operated by the Vermont Marble Company can handle monolithic columns up to 32 feet long. Fluted columns are first turned and then fluted, either by hand or by a planer.

When for some reason a piece has to be reduced materially in size it is put under the diamond saw. This is a circular saw which revolves at high speed, and is fitted with teeth containing black diamonds. This saw is also useful in cutting checks for structural steel and other similar work.

Before boxing, each piece of Vermont marble is carefully inspected as to color and compared with the listed size to make sure that it has been accurately finished. In shipping, each piece is checked off on the setting plan of the building. This must be done in order to have the shipments move in proper rotation for setting and it also insures the inclusion of every necessary piece.




1. Cutting with diamond saw.
2. Portion of cutting shed.
3. Turning rough blocks to size.
4. Planing column flutes.
5. Planing large cornice pieces.
6. Loading marble for shipment.

## Erecting Exterior Marble

NEARLY all Vermont marbles are of a striped or veined nature and are ordinarily sawed so as to show a clouded face. It naturally follows that the stone, in place in the building, sets on its edge, and not on its natural bed. This custom has always obtained, and the results have been uniformly satisfactory. Moreover, the Vermont deposits have been subjected to such great pressure that careful tests, made by the Watertown Arsenal and other authorities, reveal comparatively little difference in crushing strength between edgewise and bedwise samples.

Anchors should be of iron which should either be heavily galvanized or painted after shaping. The use of cut galvanized rods for dowels should never be permitted on account of the ungalvanized ends. Care should be taken not to set marble against unpainted structural steel or reinforcing rods.

If cushions have to be used under heavy pieces, these should be of block tin or zinc. Lead is the material often used, but our experience has been that under certain conditions this causes stains.

If metal dowels are used in connection with balustrades, care should be taken to make the holes considerably larger than the dowels, to provide for the possible expansion of the latter.

A lime mortar should be used for setting. It is important that the sand be clean and sharp. Much trouble has been caused by dirty sand. Under "Specifications for Exterior Marble" will be found detailed instructions regarding the proper mixture.

All marble stored at the site should be on cleats, off the ground, to prevent the staining from the soil. Care also should be taken not to store marble under iron or anything that would cause stains.



An example of the use of rock-faced marble. The Wheeler Residence, Chicago, Ill. W. C. Zimmerman, Architect



Memorial Amphitheatre, Arlington National Cemetery, Va. Here were used 87,000 cubic feet of Mountain White marble. Carrere & Hastings, Architects

## Specifications

THE following simple form of specifications for exterior marble work should suffice for a building of ordinary size and may form a guide for specifications for larger structures.

Special features of design or construction should be thoroughly covered. Their inclusion can do no harm and often saves mistakes and disputes as to the work covered by the specifications. For example: it is well to provide for the special dowels necessary for finials and balusters. The placing of dowels in copings is also a point that is frequently overlooked. In writing specifications, both the specifications and the drawings should be explicit as to the position of raglets. It is better not to place these too near the edges of the stone lest the stone be split by the pressure of the lead used in calking.

### SUGGESTED SPECIFICATIONS FOR EXTERIOR MARBLE

MATERIAL. All cut stone work shall be (insert name of grade) from the quarries of the Vermont Marble Company.

WORK COVERED. (Explain here in detail what portions of the building are to be of marble.)

QUALITY. All marble entering into the construction of the work shall be selected for uniform color. It must be free from cracks, chips, stains, or other defects upon exposed surfaces.

SAMPLES. Before proceeding with the work the contractor shall submit a sample 4 by 8 by 2 inches of the marble he proposes to use. One face of this sample shall have (specify what finish is desired).

JOINTS. All marble shall be cut for 3/16-inch joints.

FINISH. All exposed surfaces of marble work shall have (specify desired finish).

DRAWINGS. Detailed drawings will be furnished by the architect for all work requiring them. The contractor shall make, and submit for the architect's approval, shop drawings showing in plan and elevation the dimensions of all stones, position of joints and the spacing of dentils or other repeated ornament.

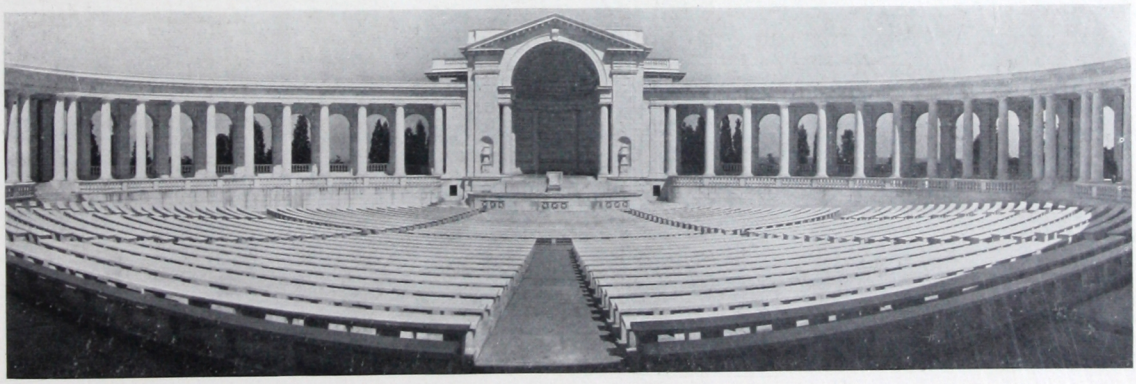
CUTTING. All cutting must be done in a workmanlike manner and in accordance with the shop drawings referred to. All faces shall be free from winds, so as to present a true and even surface. Joints shall be at right angles to the face. Intersecting profiles shall be accurately cut. Re-entering angles of mouldings shall be cut from the solid, unless otherwise shown by the drawings. The contractor shall, where called for by the architect's drawings, cut the marble work to accommodate steel, flashings, leaders or other structural materials.

DELIVERY. All marble shall be crated or otherwise protected so as to be delivered at site in good condition.

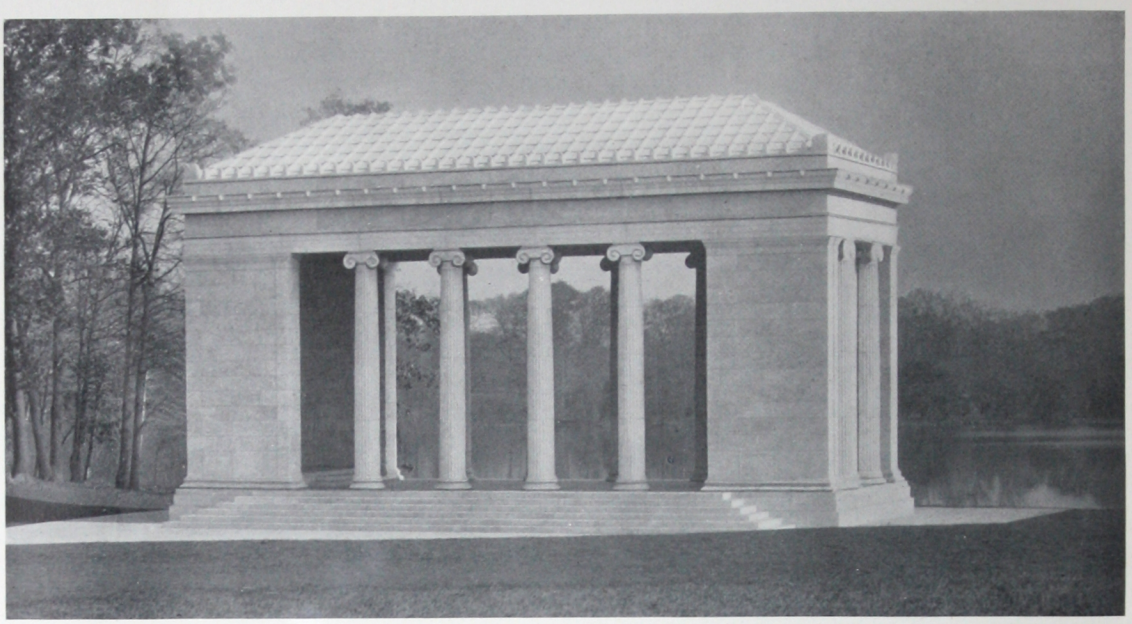
STORAGE. All marble stored at the site shall be on cleats, off the ground, and protected where necessary from any stains from above.

SETTING. Marble shall be set with a derrick and on a full bed of mortar. The mortar bed shall be kept back at least one inch from the face of the stones. Sills shall be bedded at the ends only.

MORTAR. Marble shall be set in carefully prepared lime mortar tempered with stainless cement of an approved brand, the mixture to consist of one part dry hydrated lime or quick lime paste, to not over three parts sharp washed clean sand, with the addition of a quantity of stainless cement equal to 15% of the volume of the lime used.



Interior of Arlington Amphitheatre, showing colonnade and stage



The Monument to Music in Roger Williams Park, Providence, R. I. Vermont Highland marble. Bellows & Aldrich, Architects



Davis Library, Exeter, N. H., in which are combined Vermont Eureka marble and brick. Cram, Goodhue & Ferguson, Architects

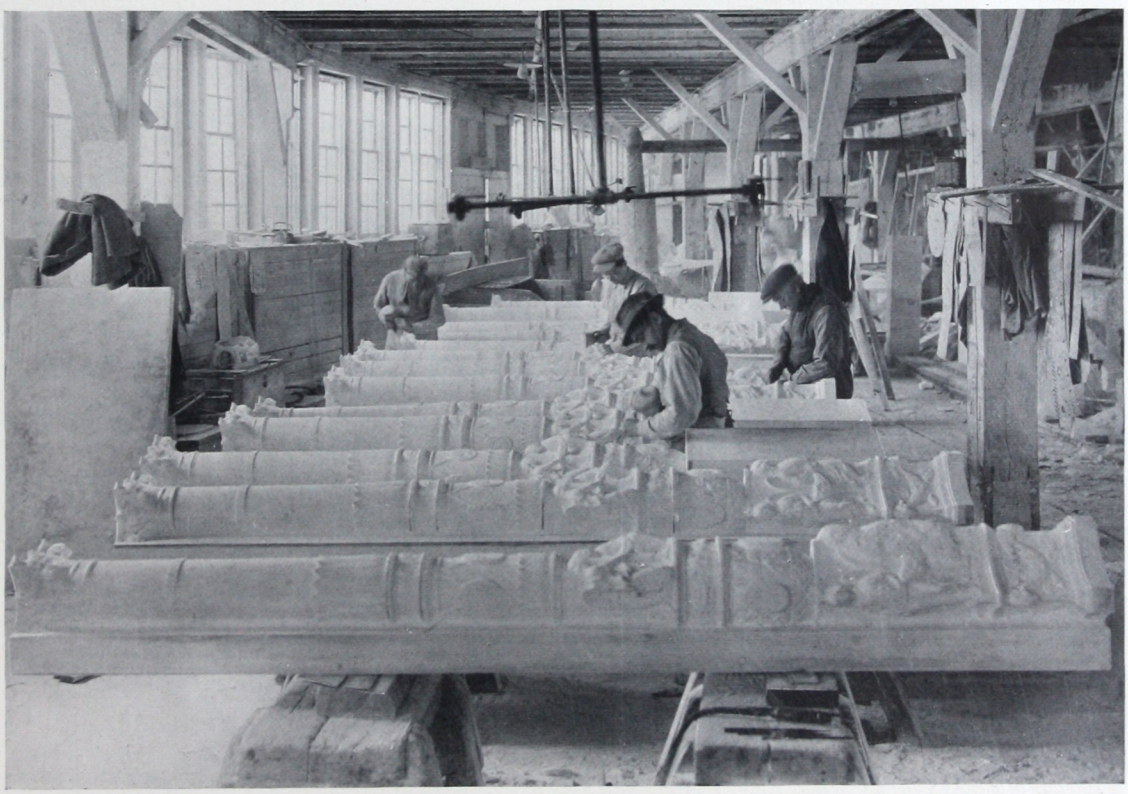


Section of Entrance to Ames Library, Ames, Ia. Proudfoot, Bird & Rawson, Architects

## Carving on Exterior Marble

OF all building materials marble is best suited for carved work. Whether it be the simplest repeated ornament, an ornate capital or a sculptured figure, marble alone can adequately bring out the beauty of the design.

In the shops of the Vermont Marble Company are master craftsmen whose lives have been spent in transforming shapeless pieces of marble into things of beauty. These columns of the Book Building are typical examples of their handiwork.



Carvers working on columns for the exterior of the Book Building, Detroit, Mich., Louis Kamper, Architect. A striking example of the adaptation of Old World artistry to the modern office building, these columns being faithful reproductions of those in the Certosa of Pavia, Italy




The Curtis Building, Philadelphia, as seen from Independence Square. Roberts & Co. and Edgar V. Seeler, Architects

## Marble for Exterior Columns

THE illustration on the opposite page shows the monolithic columns in the building of the Curtis Publishing Company, Philadelphia, Roberts & Co. and E. V. Seeler, Architects. These were produced from the Florence quarries of the Vermont Marble Company. The rough blocks were 32 feet long and nearly five feet square.

Other buildings in which Vermont marble monoliths of large size have been used are:

| | |
|---|---|
| Art Museum<br>Eugene Payette, Architect | Montreal, P. Q. |
| Soldiers' Memorial Building<br>Chas. H. Chandler, Architect | Topeka, Kans. |
| Bridgeport Savings Bank<br>Cass Gilbert, Architect | Bridgeport, Conn. |
| Continental Memorial Hall<br>E. P. Casey, Architect | Washington, D. C. |

Correspondence with our nearest branch will bring information regarding the kinds of marble which can be produced in monoliths.



Imperial Vermont marble effectively used. The Forsyth Dental Infirmary, Boston, Mass.
Edward T. P. Graham, Architect



Office of Vermont Marble Company, Proctor, Vt. R. Clipston Sturgis, Architect
Illustrating the use of random marble ashlar for plain wall work



G. A. R. Memorial, Topeka, Kans. Built of Imperial Danby marble. Charles Chandler, Architect

## Detailing of Exterior Marble

BY means of the following plates an effort has been made to show how work can be detailed with economy and without the sacrifice of any structural or artistic requirements. Every detail shown is taken from the actual construction and has been found satisfactory.

Plate I shows elevations and sections through windows and doors. The jointing is designed to combine economy and good construction. Here modillions and fillers are in separate pieces to save stock. At the bottom of this plate is a suggestion for jointing an elaborately carved wreath where combined with brick.

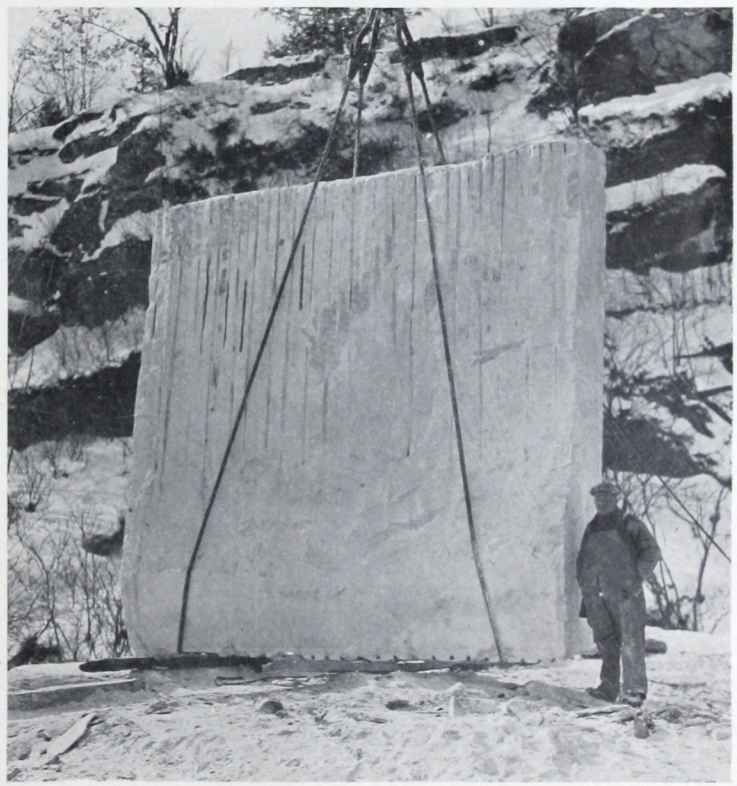
One type of cornice construction is shown by Plate II. The jointing adopted for the kneeler and the adjacent cornice on the pediment is indicated by heavy lines. To make this or any other cornice water tight, vertical joints should be packed underneath and run full of a grout of neat cement. Even with this precaution it must not be expected that cornice joints will remain permanently water tight without occasional attention.

On Plate III the bonding of the ashlar should be noted. The work on this plate, as well as that on Plates I and II, is as detailed by Carrere & Hastings for the Arlington Memorial Amphitheatre.

A portion of the loggia on the Detroit Public Library, Cass Gilbert, Architect, is shown by Plate IV. The jointing of alternating courses is indicated by dotted lines.

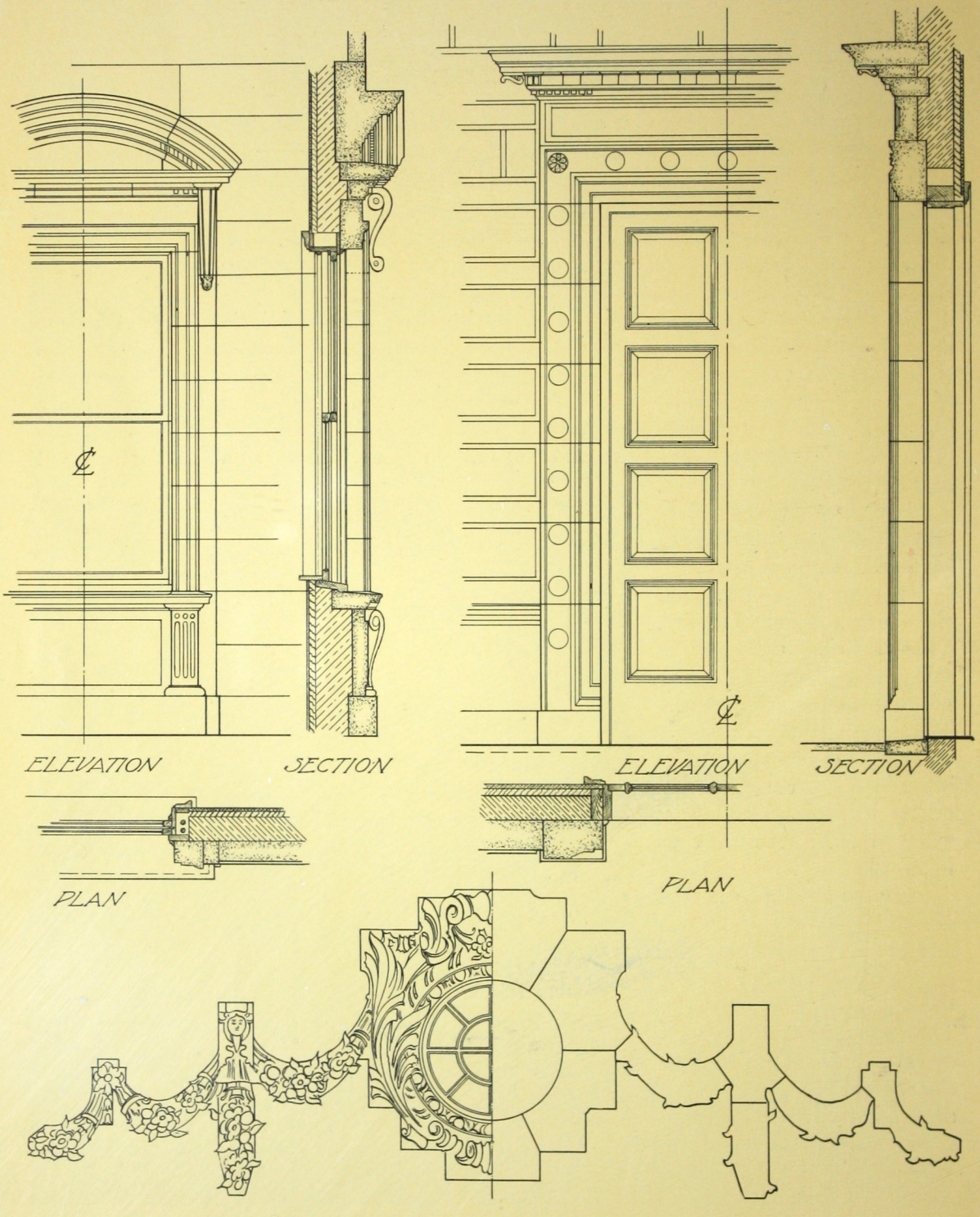
Colonial doorways of marble are always attractive, and the detail shown by Plate V will be of interest in this connection.

Rock-faced marble is well suited for certain structures and Plate VI shows how this may be combined with cut work to form a pleasing whole. The scale details at the windows and door jambs show clearly the construction at these points. The cornice here shown has a gutter of copper or lead.



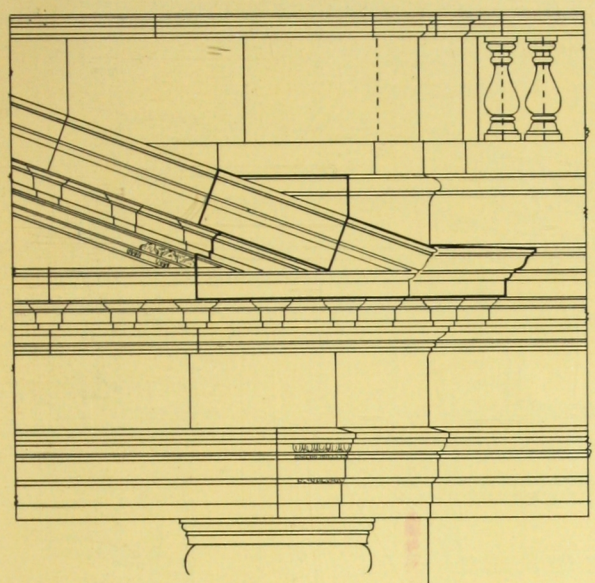
Sixty-three tons in one block. Quarried for the Scott Memorial Fountain
Detroit, Mich. Cass Gilbert, Architect

# WINDOW AND DOOR TRIM

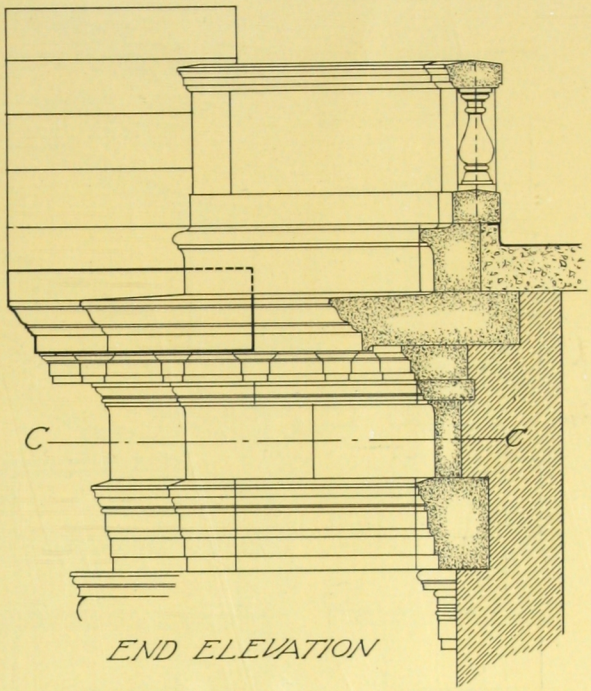



SCALE - ONE QUARTER INCH EQUALS ONE FOOT

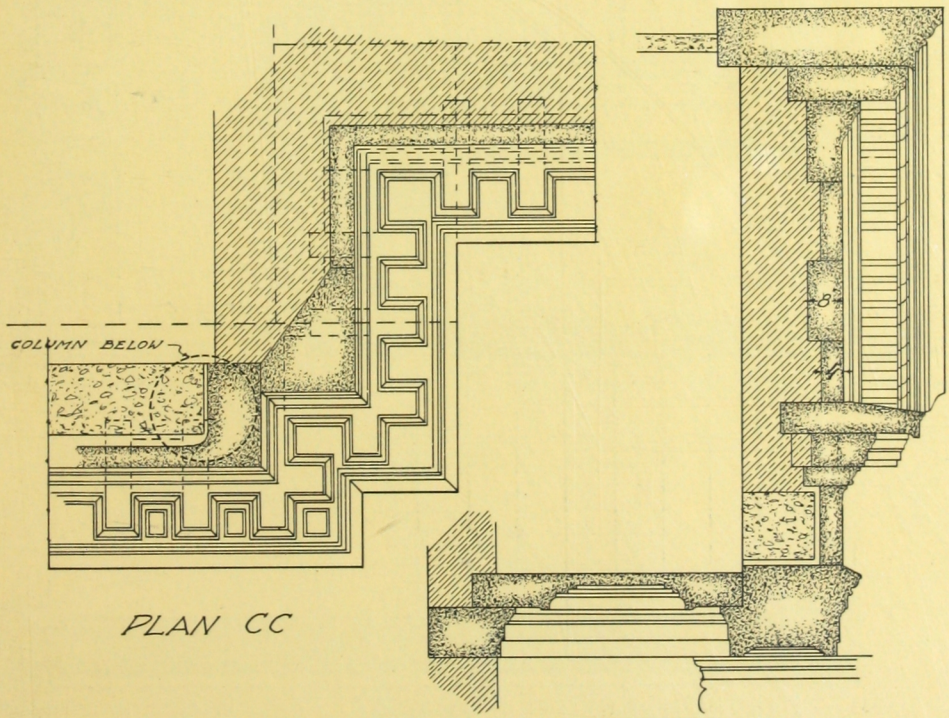
# CORNICE AND PARAPET



ELEVATION




END ELEVATION

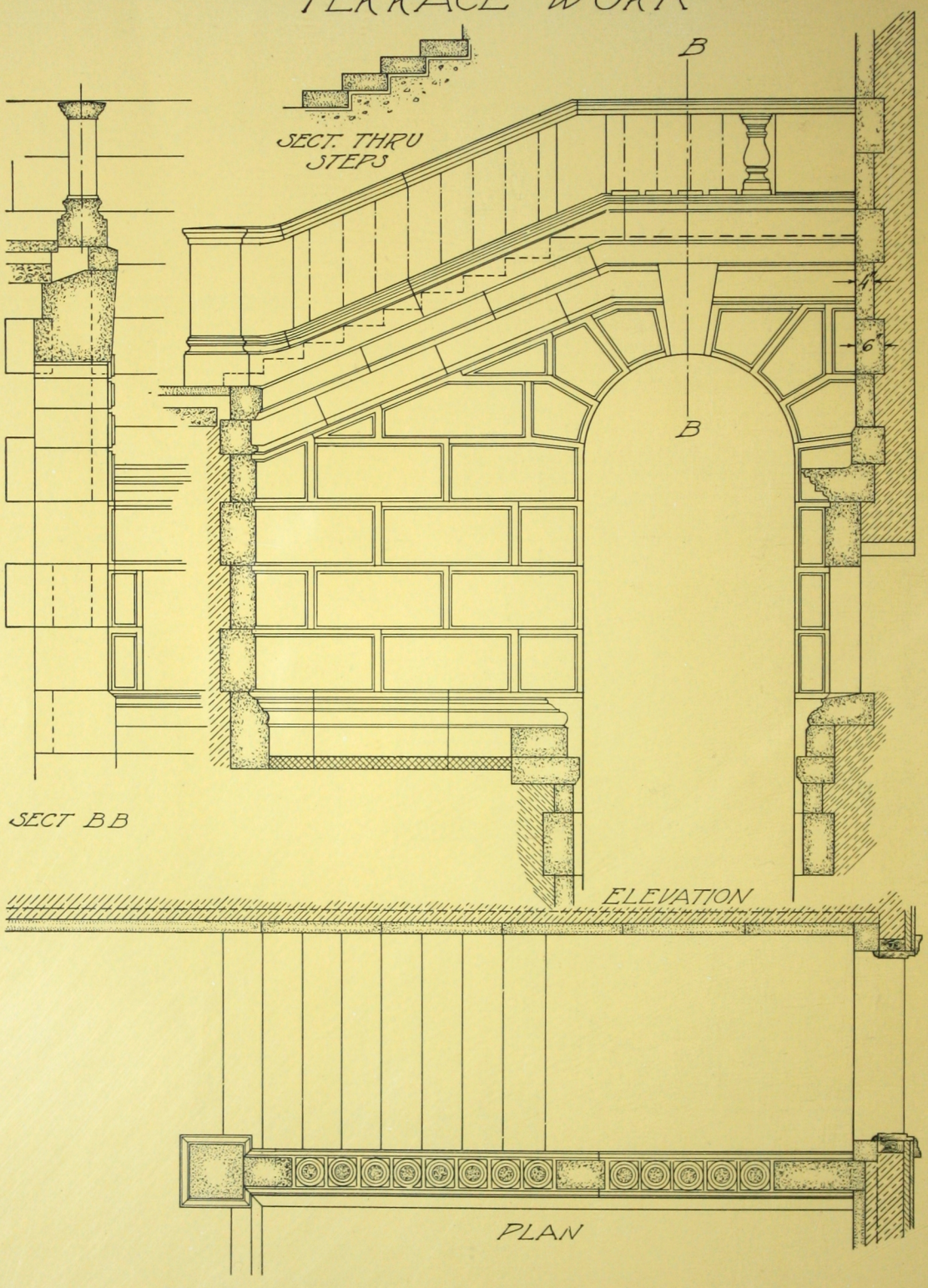



PLAN CC

SECTION THRU. THE CENTER OF THE PEDIMENT

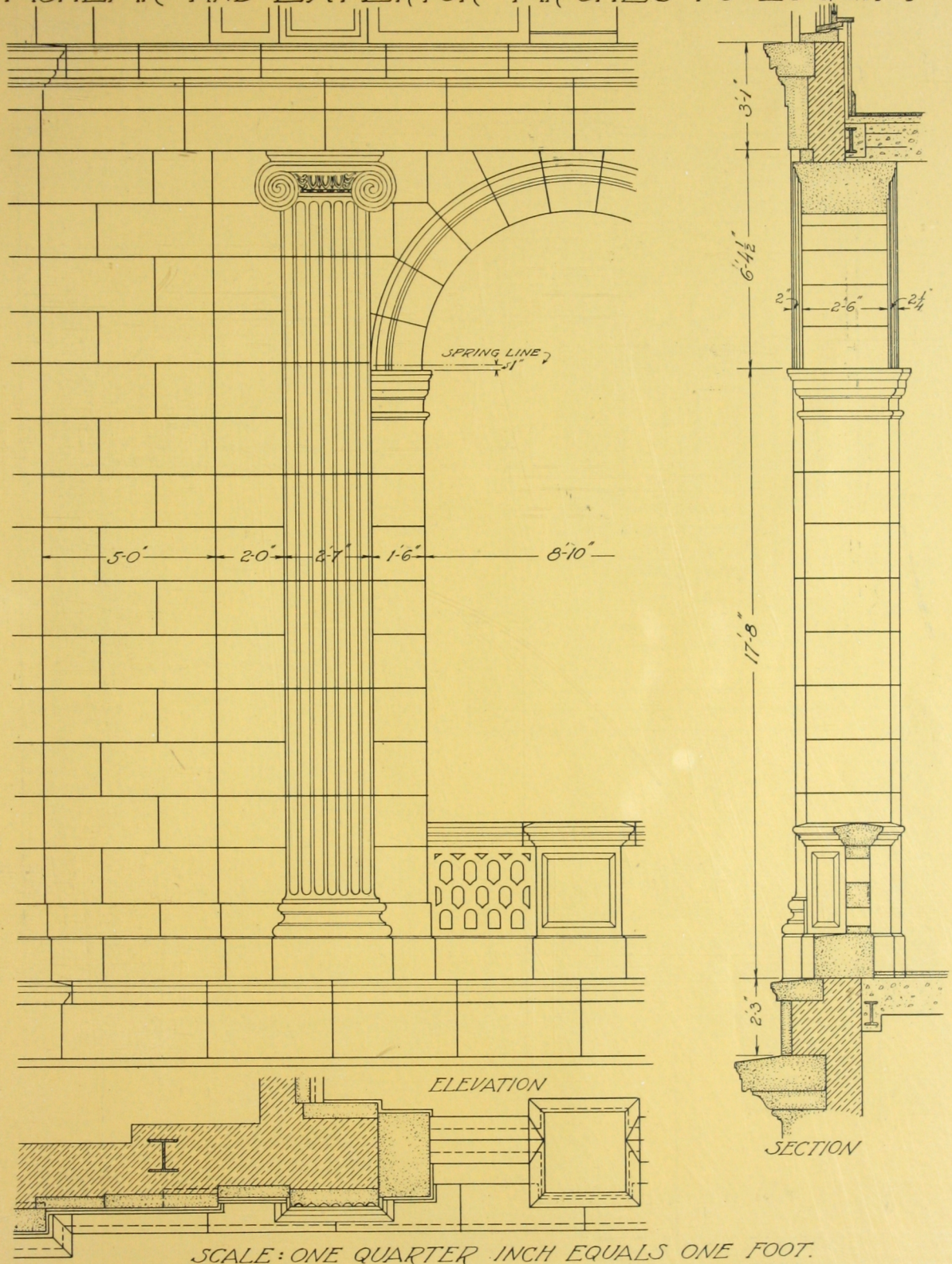
SCALE - ONE QUARTER INCH EQUALS ONE FOOT

# TERRACE WORK



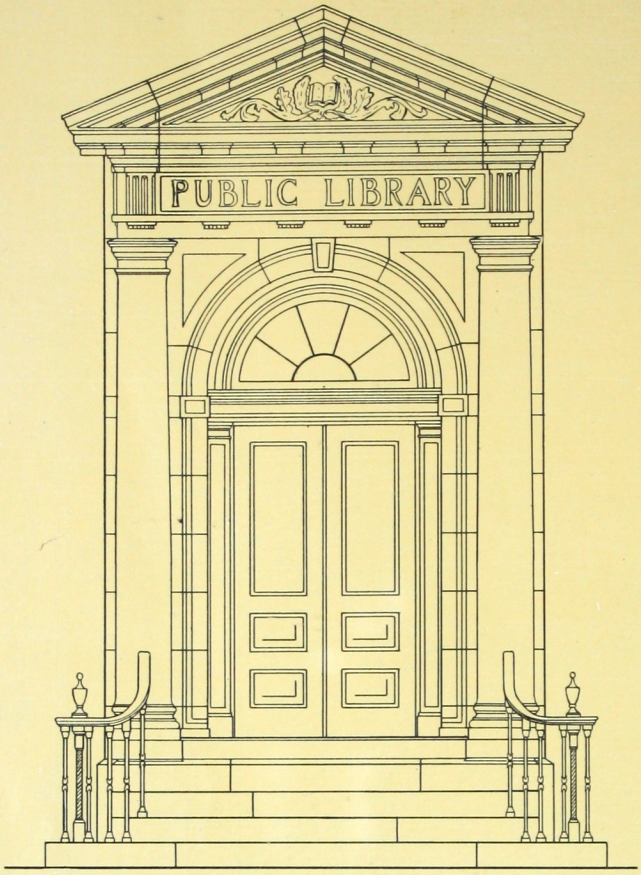

SCALE - ONE QUARTER INCH EQUALS ONE FOOT

# ASHLAR AND EXTERIOR ARCHES TO LOGGIA

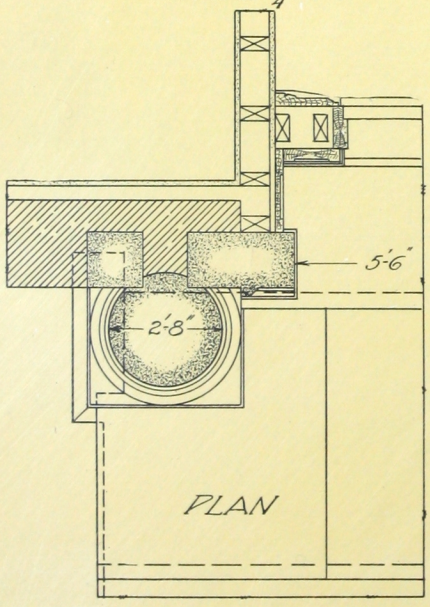



SCALE: ONE QUARTER INCH EQUALS ONE FOOT.

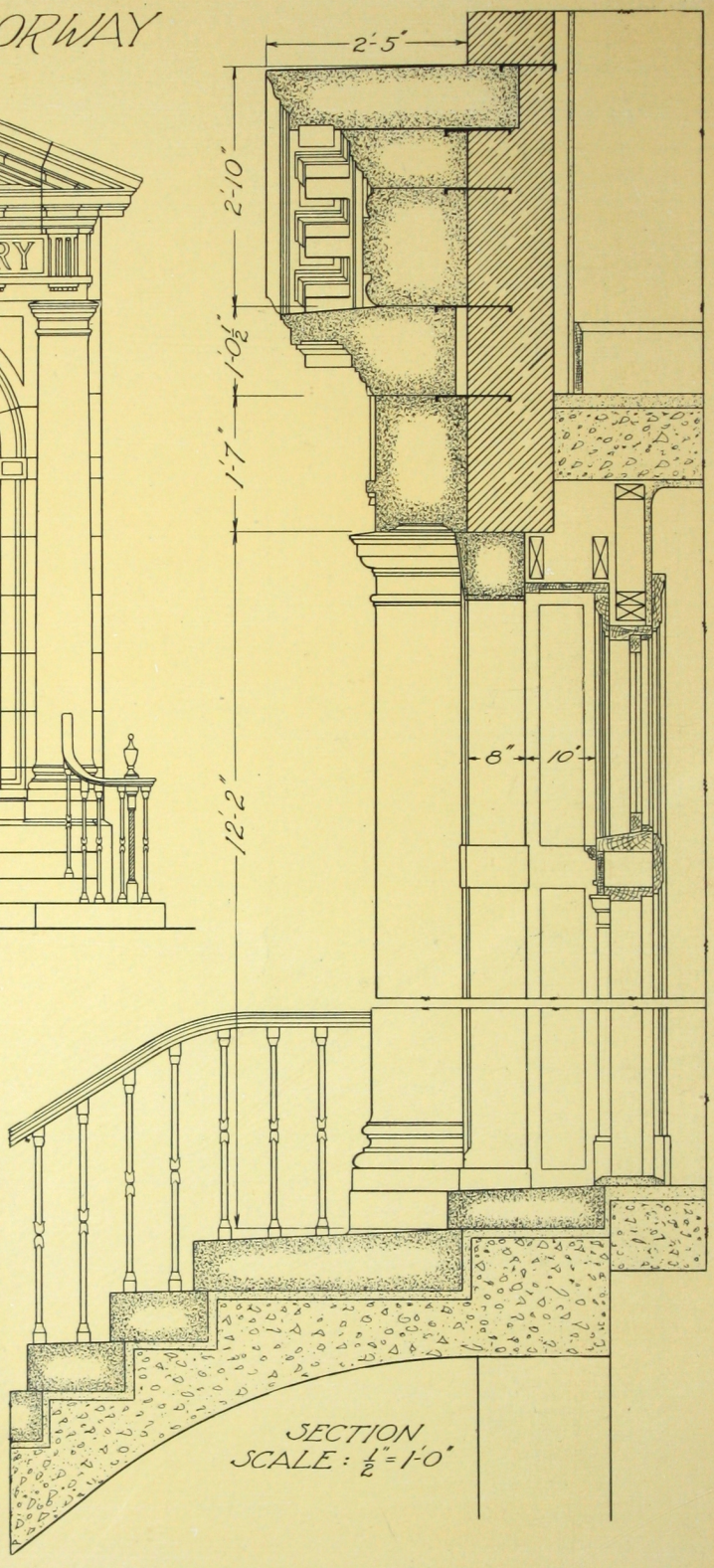
# COLONIAL DOORWAY




ELEVATION
SCALE: $\frac{1}{4}$" = 1'-0"

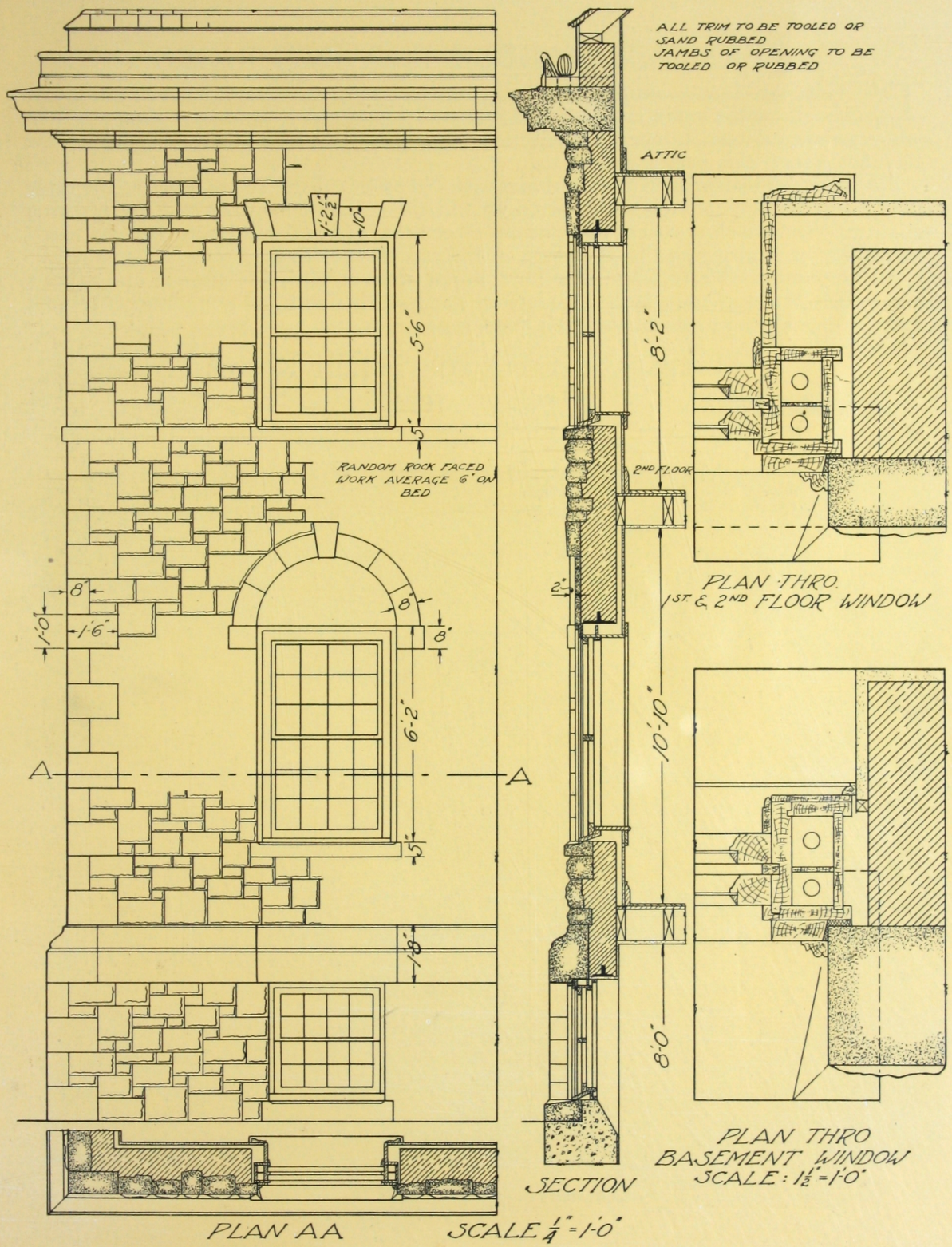



PLAN




SECTION
SCALE: $\frac{1}{2}$" = 1'-0"

# EXTERIOR TRIM AND ROCK FACED WORK



# VERMONT MARBLE FOR INTERIORS

THE Vermont Marble Company produces from its own quarries some forty-five different grades of marble for interior work. Some grades, naturally, are better adapted than others for special uses. As a guide in selecting the proper grade for a particular purpose, the classification on this page is submitted.

For toilet rooms marble is the ideal material. No other substance possesses at the same time attractive appearance, ample strength and the requisite sanitary and fire resisting qualities. While the first cost of marble may exceed that of metal substitutes it never needs refinishing or painting and is, therefore, in the end cheaper to maintain.

All Vermont marble recommended for standing work is hard, fine grained and takes a high polish. Varieties suggested for toilets are particularly dense and non-absorbent. Floor marbles are especially selected for their wearing qualities.

## Marbles Suitable for Toilet Rooms

Olympian White
Mountain White
Metawee
Pink Lepanto
Northern White
Pittsford Italian
Venoso
Florence
Tokeen
Avenatto
Neshobe Gray

## Marbles for Decorative Purposes

All Vermont marbles listed as interior varieties fall under this class, but the following special suggestions are offered:

Corridor Base. Verde Antique, Lyonnaise, Oriental, Royal Red, Champlain Black, Verdoso, Pink Lepanto, French Gray, Gravina, Pittsford Italian, Florence.

Ashlar Wainscot. Light Cloud, Best Light Cloud, Second Statuary, Mountain White, Light Vein, Brocadillo, Northern Ivory.

Bank Screens. Gravina, Striped Brocadillo, American Pavonazzo, Westland Cippolino, Westland Cream Pavonazzo, Tokeen, Avenatto, Royal Antique.

Matched Panels. Listavena, Striped Brocadillo, Westland Cippolino, Avenatto, Venoso, Royal Antique.

Columns and Pilasters. Brocadillo, Listavena, Striped Brocadillo, Pink Lepanto, Royal Antique.

Carved Work. Second Statuary, Best Light Cloud, Light Cloud.

## Marbles Suitable for Floors and Treads

The following are the stock sizes of tile, the thickness varying from three-quarters of an inch to one inch:

0.10 x 0.10 1.0 x 1.0 1.4 x 0.8 1.8 x 0.10 2.0 x 1.0

Tile and border are uniformly specified with sand finish.

The following are the usual grades of Vermont marble tile:

Pittsford Italian. A hard, light colored, veined tile.

Selects. A hard white tile with minimum veining.

Corona. A hard variegated white.

Top White Selected. A very white tile, suitable for mausoleums, residences, etc.

Top White. Carrying slightly more color than the above.

Rutland Light Vein. A variegated green and white tile for residence and similar work.

Venoso. A special veined tile of unusual character. Refer to illustration of Hotel Traymore on page 37.

Champlain Black, Verde Antique, Jasper, Oriental, Olive, Lyonnaise, Tokeen Alaska and Gravina are all suitable for floors.

Verdoso and Pittsford Italian are also often used for borders and treads.

## Vermont Marbles Listed by Colors

White. Extra White, Second Statuary, Best Light Cloud, Light Cloud, Olympian White, Mountain White, Northern White, Pittsford Italian, Avenatto, Tokeen, Metawee.

Green and White Mottled. Light Vein, Brocadillo, American Pavonazzo.

Green and White Striped. Listavena, Striped Brocadillo.

Green. Verde Antique, Olivo, Verdoso, Olive.

Red. Jasper, Lyonnaise, Oriental, Royal Red, Pink Lepanto.

Buff. Royal Antique.

Gray and Black. French Gray, Champlain Black and Gravina.

Blue Shade. Florence, Neshobe Gray.

Cream Shade. Venoso, Pittsford Italian, Northern Ivory.

## Finishes of Interior Marble

Polished. This is the standard finish for interior work, not exposed to wear. The marble has a mirror-like surface.

Hone Finish. As described under finishing processes, marble that is honed presents a perfectly smooth surface but is not glossed.

Grit Finish. A most effective finish for light colored ashlar in buildings of monumental character. It is a smooth finish put on by brown grit and is next to the hone finish in fineness.

Fine Sand Finish. This is the standard finish for floors and stair treads. It is put on by the rubbing bed.

## Process of Finishing Interior Marble

THE sawed slabs for thin work come from the mills the full size of the block. They are first coped or broken to within about an inch each way of the finished size and passed on to the rubbing beds. These operate as described under the exterior section. By their use the slab is brought to exact size and the face rubbed smooth.



Main Lobby, Hotel Traymore, Atlantic City, N. J. Floors of Venoso, walls of Verde Antique and special Silvestre
Price & McLanahan, Architects

The slab then passes through the polishing machines which are fitted with revolving heads. The first step is known as gritting and an aluminous abrasive is used. The marble is then ready for a second and finer abrasive or hone. This leaves the surface perfectly smooth. The final gloss is put on by the use of a felt head and a polishing powder known to the trade as putty powder. The use of putty rather than acid insures a lasting polish. The slabs are then assembled for matching, checked as to size and boxed.

Pieces which are to be moulded are first brought to exact size on the rubbing bed. Heavy mouldings are cut on the planer. For lighter mouldings the carborundum machine is used. This has a carborundum wheel shaped to the reverse of the mould. A suitable moving platen or bed carries the marble, feeding it under the rapidly revolving wheel. All mouldings are polished by hand.

All moulded work turned out by the Vermont Marble Company, after being machined, passes on to the fitters. Adjacent pieces are made to "member" accurately, and any necessary miters or returns are cut. This is an essential part of the process; without it there can be no assurance that the work will go together properly at the building.




New York Central Station, Utica, N. Y. A notable example of the use of Royal Antique
Stem & Fellheimer, Architects

## Specifications

THE absence of explicit instructions in specifications is often a source of controversy. The thickness of material in general should be specified. This is ordinarily 7/8 of an inch thick for standing work and tile; 1 1/4 inches for treads, stiles and capping. Partitions vary from 7/8 to 1 1/4 inches, depending upon the size. The height of toilet room work should either be specified or clearly shown. Toilet work is ordinarily seven feet from the floor to the top of the partitions, the dividing partitions being one foot from the floor and the end partitions extending to the floor. Whether the stiles run to the floor or are supported on metal legs should be either specified or clearly shown. Specifications should also provide for marble capping over the stiles or for metal rail. If cove base is desired this should be specified and the size should be given. It is often a question whether the cove is to run under the stiles and partitions, and this point should be covered.

The kind of joints to be used should be fully covered by the specifications and drawings. Butt joints are the ordinary construction and if quirk-miter joints are desired their location should be clearly defined.

Where plaster occurs in connection with marble work, the plasterer should be required to finish his white-coating before marble work is started. Wet plaster is likely to dull the gloss of marble and it is difficult to protect the latter. This together with the danger of damage from scaffolding far outweighs the slight disadvantage of plaster patching. In working out specifications and details, the marble contractor should be given at least one-inch bed for his tile. This is often overlooked and a poor job of floor work results.

In the specifications suggested below, the usual clause is inserted requiring verification of measurements at the building. On contracts of any size the general contractor should be required to agree with the marble contractor to certain finished sizes in advance, thus enabling the work of the latter to proceed. The work of other subcontractors should, of course, be constructed in harmony with these finished sizes. This procedure will insure the marble being ready as soon as the building is ready to receive it.

As an aid in framing specifications the following general suggestions are submitted. In using them care should be taken as above suggested to cover fully any special or doubtful points.

## Suggested Specifications for Interior Marble

Material. All interior marble shall be as follows: all toilet marble, Vermont Venoso; all corridor marble, Vermont Brocadillo. (Always insert the name of the desired grade, avoiding the too general term, "Vermont marble.")

Work Covered. (Explain here in detail what portions of the building are to be of marble.)

Quality. All interior marble shall be of good quality, free from stains. Patching will be permitted only where the natural imperfections of a particular stone are subject to correction by the established usage of the industry.

Samples. Before proceeding with the work the contractor shall submit to the architect samples of all the marbles specified above, one foot square and 7/8 inch thick.

Finish. All floors and stair treads shall have a fine sand finish. All standing marble shall be highly polished.

Drawings. Detailed drawings will be furnished by the architect for all work requiring them. The contractor shall make and submit for the architect's approval shop drawings showing proposed jointing.

Measurements. Before proceeding to finish the interior work the contractor shall verify all measurements at the building.

Cutting. The marble contractor shall do such necessary cutting and fitting to accommodate his work to other trades as is sanctioned by common usage in the trade.

Setting. All floor marble shall be set in a cement mortar of one part cement and three parts sand, adding a quantity of hydrated lime, not exceeding 10 per cent of the volume of cement. The concrete fill must be swept and thoroughly sprinkled before setting is started. All stair treads and all standing marble shall be set in plaster of Paris. All wall marble shall be securely anchored with brass, copper or aluminum wire.

When work is completed all marble shall be cleaned and left in good condition.




Stairway in the American Red Cross Building, Washington, D. C. Columns of Royal Antique, walls and balustrades of Best Light Cloud Rutland. Trowbridge & Livingston, Architects

## Method of Setting Interior Marble

FLOOR marble is set in Portland cement and sand, the usual mixture being one to three. The concrete fill should be brought up by the contractors to a level of about 2½ ins. below the finished floor. Before spreading the mixture in which the tile are bedded, the concrete should be swept clean with a broom and thoroughly sprinkled. Each tile should be painted on the back with a grout of neat cement and pounded into place on a full bed. These precautions will prevent hollow sounding floors. No travel on a floor should be allowed for at least twenty-four hours after setting. The joints may then be grouted with neat cement.

Ashlar tile in narrow corridors should be laid with the longer dimension crossways of the corridor. This gives the corridor the appearance of greater width.

Since it is impossible in laying a large floor to get an absolutely true surface, rubbing is usually necessary. This may be done by hand or by machine. An abrasive such as carborundum or aloxite is used.

Stair treads are bedded in plaster of Paris. No anchors are necessary.

Standing work is usually set in plaster of Paris. It is important for this reason to have the supporting walls free from moisture and to set the marble in such a way that it will dry out rapidly. Continued presence of water causes plaster of Paris to form a weak acid which will sometimes penetrate the veins of the marble and show as a whitish deposit on the face.



Looking toward transept window, Roman Catholic Cathedral, Buffalo, N. Y. Light Vein Vermont used for walls and ceilings. Aristides Leonori & Sons, Rome, Italy, Architects

This action will stop as soon as the marble is dry but it tends to dull the polish and can usually be prevented. Anchors should be made of brass, copper or aluminum wire. Number 10 Stubbs Gauge is the proper size for ordinary work.

Walls which are to receive marble should not be plastered, as an air space back of the slabs is essential. Care must be taken not to set marble against unpainted steel, walls of old brick or other material which may cause stains. Exterior walls should be either painted with damp-proof paint or furred out before marble is set against them. This is usually done back of plaster and is equally necessary back of marble.

It is entirely possible, as shown by detail Plate IX, to erect toilet marble without the use of metal, and this method is preferred by many architects.

Where metal is specified, this should be white metal or brass, nickel plated. Where it is necessary to attach fittings of any kind to marble, brass and not iron screws must be used.



Executed in Second Statuary Vermont Marble

## Ecclesiastical Work

FOR altars, fonts and other church work, Vermont marble stands unrivaled. The lighter grades of Rutland, such as Best Light Cloud, Second Statuary and Light Rutland Italian are ordinarily employed. Where decorative columns or panels are desired, Pink Listavena, Westland Cippolino, Verde Antique or the red Swanton marbles may be used. All of the light Rutland marbles produce beautiful effects when carved. A conception of the quality of the marble as well as the skill of Vermont carvers can be gained from the rendering of Leonardo da Vinci's "Last Supper" which is reproduced on this page.

All altars from the Vermont shops are carefully fitted, piece by piece. Certain sections are even set up in the shops. This is to insure the accuracy of membering which should characterize a properly finished altar.

# GRADES OF VERMONT MARBLE FOR INTERIORS

THE various kinds of Vermont marble now being produced for interior purposes have been arranged alphabetically in the following list. In most cases there are references to certain buildings where the particular marble has been used. It must not be understood that the list of buildings is by any means complete. Those mentioned, however, are representative installations.

## Interior Marbles

AMERICAN PAVONAZZO. A highly decorative Rutland marble with clean white background and dashes of bright green color. Very effective for bank screens in conjunction with Vermont Verde Antique base. Where used for columns or pilasters the thickness must not exceed 20 inches. Length not limited. Representative installations may be seen in nearly every city. The following are selected from a long list:

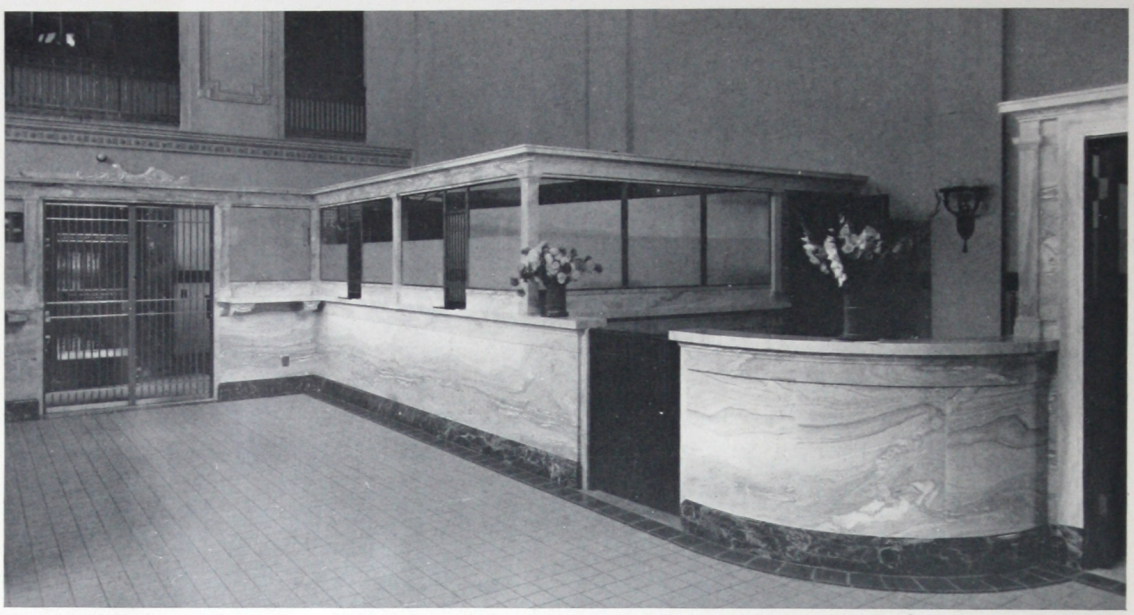
| | | |
|---|---|---|
| National Bank | Watervliet, N. Y. | Mowbray & Uffinger, Architects. |
| Exchange Building (Columns) | Memphis, Tenn. | N. M. Woods, Jr., Architect. |
| State Capitol (Pilasters in rotunda) | Boise, Idaho | Tourtelotte & Hummel, Architects. |
| Troy Gas Building | Troy, N. Y. | L. N. Milliman, Architect. |
| Fulton County Court House (Part of Courtrooms) | Atlanta, Ga. | A. Ten Eyck Brown and Morgan & Dillon, Architects. |
| Grand Rapids National Bank | Grand Rapids, Mich. | Williamson & Crow, Architects. |
| Frick Annex (Decorative panels) | Pittsburgh, Pa. | D. H. Burnham & Co., Architects. |
| First National Bank (Decorative panels) | Pittsburgh, Pa. | D. H. Burnham & Co., Architects. |
| Market St. Title & Trust Co. | Philadelphia, Pa. | Wesley Lesher Blithe, Architect. |

AVENATTO. The same marble as Pittsford Italian W, but sawed so as to show the veins. Very effective for pilasters and columns. Successfully used for bank screens and similar work. The following contracts have been executed entirely in Avenatto:

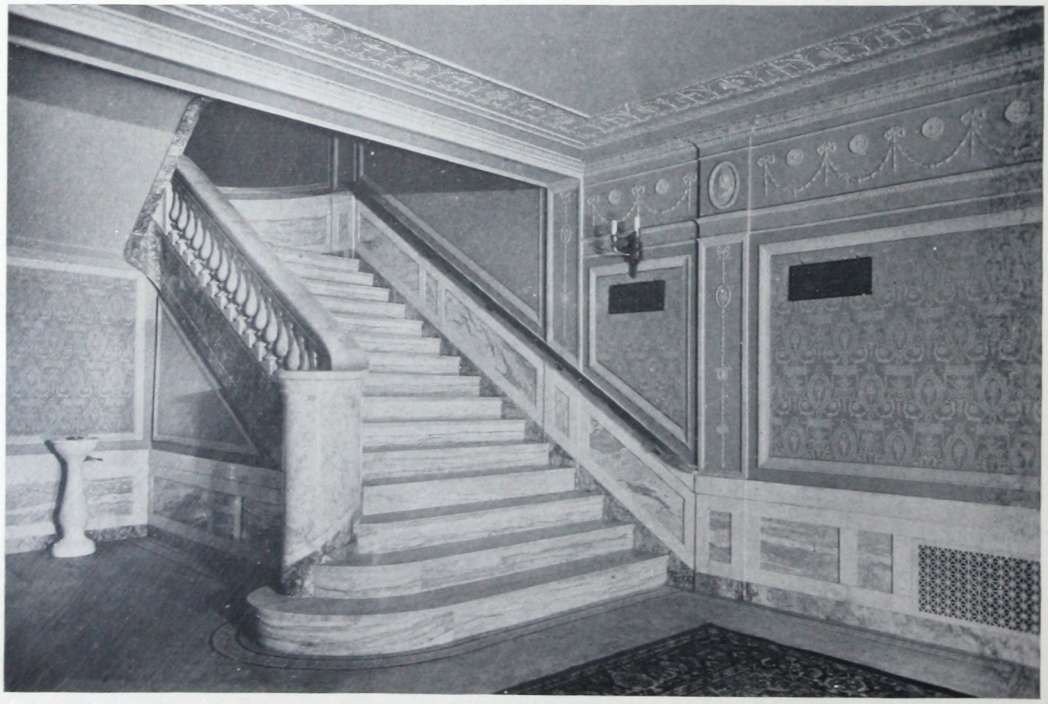
| | | |
|---|---|---|
| Campbell Soup Building | Camden, N. J. | Wm. Steele & Sons Co., Architects. |
| U.S. Post Office | Frankfort, Ind. | Oscar Wenderoth, Supervising Architect. |
| Allen County Savings & Loan Building | Lima, Ohio | McLaughlin & Hulsken, Architects. |
| Community Mausoleum | Easton, Pa. | Edward Leber, Architect. |
| Bellevue Court Building | Philadelphia, Pa. | Horace Trumbauer, Architect. |

BEST LIGHT CLOUD RUTLAND. From West Rutland (Vermont) quarries. Carries somewhat less color than Light Cloud. Its uses are the same. No limit as to size of slabs, and can be produced in reasonable quantities. The following representative jobs of Best Light Cloud have been selected from a long list:

| | | |
|---|---|---|
| North American Building (Corridors) | Chicago, Ill. | Holabird & Roche, Architects. |
| McCormick Building (Corridors) | Chicago, Ill. | Holabird & Roche, Architects. |
| Leader News Building | Cleveland, Ohio | C. A. Platt, Architect. |
| Hamilton County Court House (Upper corridors) | Cincinnati, Ohio | Rankin, Kellogg & Crane, Architects. |
| Red Cross Building | Washington, D. C. | Trowbridge & Livingston, Architects. |
| Transportation Building | Ottawa, Ont. | James Ewart, Architect. |
| National Museum (Entrance) | Washington, D. C. | Hornblower & Marshall, Architects. |



Lewis County Trust Company, Lowville, N. Y. Kinne & Frank, Architects
A bank interior finished largely in Westland Cream Pavonazzo



A combination of Vermont marbles effectively employed. The Orpheum Theatre, Boston. The Hoffman Co., Architects

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

BROCADILLO. From the West Rutland (Vermont) quarries. A mottled green marble very even in color and texture. Adapted to corridor wainscot, columns, balusters, architraves and other interior decorative purposes. Abundant supply and no limit as to size of slabs. Brocadillo gives unusual satisfaction and the following installations are selected from a long list:

| | | |
|---|---|---|
| First National Bank | Lafayette, La. | Hoggson Bros., Architects. |
| Bender Hotel | Houston, Texas | C. D. Hill & Co., Architects. |
| State Capitol (Corridor wainscot) | Boise, Idaho | Tourtelotte & Hummel, Architects. |
| Huron County Court House | Norwalk, Ohio | Vernon Redding, Architect. |
| Breakers Hotel (Stairway) | Atlantic City, N. J. | V. B. Smith, Architect. |
| B. & A. R. R. Station | Pittsfield, Mass. | B. & A. Engineering Department, Architects. |
| Fulton County Court House (Part of Court-rooms) | Atlanta, Ga. | A. Ten Eyck Brown and Morgan & Dillon, Architects. |
| Merchants National Bank | St. Paul, Minn. | Jarvis Hunt, Architect. |
| Palace Theatre | St. Paul, Minn. | Buechner & Orth, Architects. |
| Grand Rapids National Bank | Grand Rapids, Mich. | Williamson & Crow, Architects. |
| Hibernia Bank Building | New Orleans, La. | D. H. Burnham & Co., Architects. |
| Forest Lawn Mausoleum | Toronto, Ont. | Green & Wicks, Architects. |
| First National Bank | Montrose, Pa. | T. I. Lacey & Son, Architects |

CORONA TREAD STOCK. This is the same marble that is described under Corona in the exterior section. It is a hard, light colored marble particularly suited for floors and treads.

CHAMPLAIN BLACK. Quarried at Isle La Motte, Vermont. A hard, black marble, generally used for base, trim, counter tops, etc., and for border and tile. It has been so used in the following representative buildings selected from a long list:

| | | |
|---|---|---|
| Federal Reserve Bank | Boston, Mass. | R. Clipston Sturgis, Architect. |
| U.S. Post Office | St. Paul, Minn. | James Knox Taylor, Supervising Architect. |
| First National Bank | Denver, Colo. | F. E. Edbrooke, Architect. |
| Mayo Building | Tulsa, Okla. | Mayo Furniture Co., Architects. |
| Perkins Building | Tacoma, Wash. | Russel & Babcock, Architects. |
| Art Museum | Toronto, Ont. | Darling & Pearson, Architects. |
| Mercer County Court House | Celina, Ohio | Peter M. Hulsken, Architect. |
| Santa Fe Building | Dallas, Texas | Whitson & Dale, Architects. |

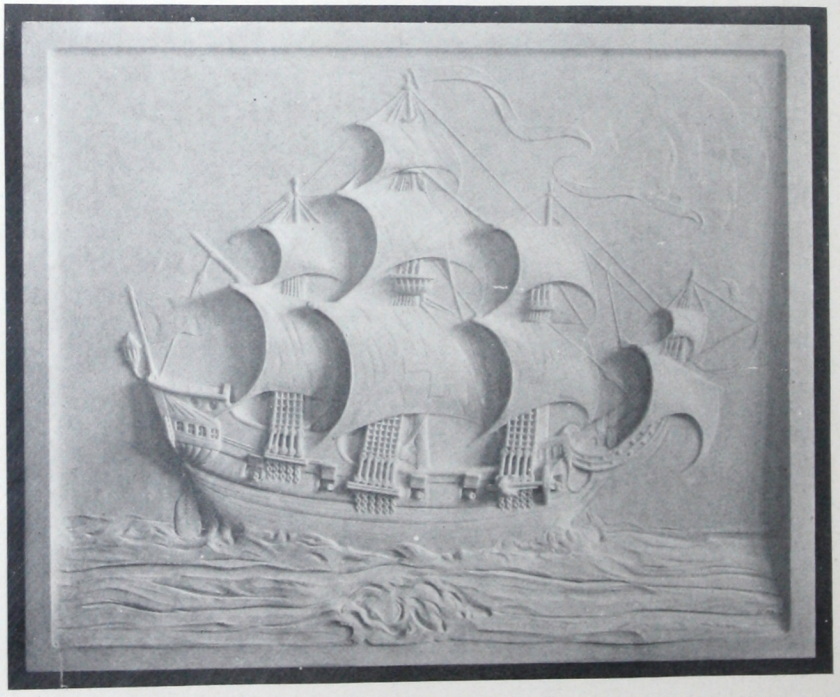
EXTRA WHITE RUTLAND. From West Rutland (Vermont) quarries. A pure white marble limited generally in its use to vault interiors and ecclesiastical work. Ordinary sizes can be produced but the quantity is never large.

FLORENCE TREAD STOCK. This is the same marble that is described under Florence in the exterior section. It is a blue shade marble, very hard, and is particularly adapted for floors and treads.

FLORENCE. A blue shade marble with clean markings, quarried at Florence, Vermont. Very hard and non-absorbent. Particularly adapted for public toilet rooms. Not limited




State Seal
of
New York
in the Capitol
at Albany
Second Statuary
Marble
L. F. Pilcher
Architect



Mural Tablet
in
Baker Residence
at Glen Cove
Long Island
A Study in
Rutland Statuary
Marble
Walker & Gilette
Architects

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

as to size or quantity. Florence marble has long been on the market and typical installations of toilets in this material will be found in the following buildings:

| | | |
|---|---|---|
| City Savings Bank | Albany, N. Y. | Marcus T. Reynolds, Architect. |
| Telephone Building | Boston, Mass. | Peabody & Stearns, Architects. |
| New Haven County Court House | New Haven, Conn. | Allen & Williams, Architects. |
| State Capitol | Helena, Mont. | F. M. Andrews & Co., Architects. |
| City Hall | Battle Creek, Mich. | E. W. Arnold, Architect. |
| Lincoln Hall | University of Illinois | W. Carbys Zimmerman, Architect. |
| City Hall | Dallas, Texas | C. D. Hill & Co., Architects. |
| Mayo Building | Tulsa, Okla. | Mayo Furniture Co., Architects. |
| Wanamaker Store | Philadelphia, Pa. | D. H. Burnham & Co., Architects. |
| Telephone Building | Providence, R. I. | Clark & Howe, Architects. |
| Kirby Hall, S. M. U. | Dallas, Texas | De Witt & Lemmon, Architects. |
| Doctors Building | Cincinnati, Ohio | Tietig & Lee, Architects. |
| Besse Security Building | Springfield, Mass. | Brown & Von Beren, Architects. |
| Weaver High School | Hartford, Conn. | Frank Irving Cooper Corp'n, Architects. |

FRENCH GRAY. A mottled dark gray marble, quarried at Bluff Point, N. Y., and Isle La Motte, Vt. Very hard and non-absorbent. Well suited for base and trim. Can be produced in reasonable sizes and quantities. The following are representative installations of trim:

| | | |
|---|---|---|
| Massachusetts State Capitol | Boston, Mass. | Andrews, Chapman & Sturgis, Architects. |
| Book Building | Detroit, Mich. | Louis Kamper, Architect. |
| Mt. Pleasant Mausoleum | Toronto, Ont. | Darling & Pearson, Architects. |
| Polk Street Freight Depot | Chicago, Ill. | Price & McLanahan, Architects. |
| Federal Reserve Bank | Boston, Mass. | R. Clipston Sturgis, Architect. |
| Stratford Community Mausoleum | Stratford, Ont. | Cameron & Ralston, Architects. |

LIGHT CLOUD RUTLAND. From West Rutland (Vermont) quarries. White background with green clouds. Suitable for corridor wainscot and moulded and carved work. Effective for vault interiors. No limit as to size of slabs or quantity. Light Cloud may be termed the standard white Vermont marble. It has been extensively used for many years and the following are selected from the long list of buildings where it has been employed:

| | | |
|---|---|---|
| Dime Bank | Detroit, Mich. | Graham, Burnham & Co., Architects. |
| Putnam Building | Davenport, Iowa | D. H. Burnham & Co., Architects. |
| New Haven County Court House | New Haven, Conn. | Allen & Williams, Architects. |
| Municipal Building | Waterbury, Conn. | Cass Gilbert, Architect. |
| Community Mausoleum | Toronto, Ont. | Green & Wicks, Architects. |
| Union National Bank (Corridors) | Cleveland, Ohio | Walker & Weeks, Architects. |
| Marshall Field Annex (Corridors) | Chicago, Ill. | Graham, Burnham & Co., Architects. |
| Hotel Statler (Corridor base) | Cleveland, Ohio | George B. Post, Architect. |
| Exchange Building | Memphis, Tenn. | N. M. Woods, Jr., Architect. |
| Schwind Building | Dayton, Ohio | Schenck & Williams, Architects. |
| First National Bank Building | San Francisco, Calif. | D. H. Burnham & Co., Architects. |
| Loew's Theatre | Ottawa, Ont. | Thomas Lamb, Architect. |
| California Commercial Union Building | San Francisco, Calif. | George W. Kelham, Architect. |
| Washington-Essex Building | Boston, Mass. | A. H. Bowditch, Architect. |

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

LIGHT VEIN. From West Rutland quarries. Similar to Light Cloud but carries more color. Used with good effect for corridor wainscot and for community mausoleums. No restrictions as to size or quantity. Light Vein marble has been used in the following buildings:

| | | |
|---|---|---|
| Hotel Statler | Buffalo, N. Y. | George B. Post & Sons, Architects. |
| Roman Catholic Cathedral | Buffalo, N. Y. | Aristides Leonori & Sons, Architects. |
| Glens Falls Fire Insurance Building (Corridors) | Glens Falls, N. Y. | George B. Post & Sons, Architects. |
| Prairie Oil and Gas Building | Independence, Kans. | Madorie & Berdsall, Architects. |
| Stratford Community Mausoleum | Stratford, Ont. | Cameron & Ralston, Architects. |
| Community Mausoleum | Waverly, N. Y. | C. W. Smith, Architect. |

LISTAVENA. A veined green and white marble from the West Rutland (Vermont) quarries. Can be produced in slabs up to five feet wide. Very effective for columns, pilasters and trim. Length not limited. Representative installations are:

| | | |
|---|---|---|
| Second National Bank | Reading, Pa. | Muhlenburg Bros., Architects. |
| Childs Restaurant (Pilasters) | Toronto, Ont. | Denison, Stevenson & Westervelt, Architects. |
| Union Block Interior | Anderson, Ind. | Richards, McCarthy & Bulford, Architects. |
| Mohican Store | Buffalo, N. Y. | A. L. Brockway, Architect. |
| Newcomb Hospital | Vineland, N. J. | Stearns & Woodnutt, Architects. |
| Mercer County Court House | Celina, Ohio | Peter M. Hulsken, Architect. |
| Detroit Warren Road Office Bldg. | Cleveland, Ohio | Lehman Schmidt Co., Architects. |

MOUNTAIN WHITE. From Danby (Vermont) quarries. Similar to Olympian White but carries more color. Its uses are the same. The following contracts show the use of Danby marble for interior decoration:

| | | |
|---|---|---|
| U.S. Customs House | Boston, Mass. | Peabody & Stearns, Architects. |
| State Capitol (Corridor wainscot in new portion) | Boston, Mass. | Andrews, Chapman & Sturgis, Architects. |
| Grace Hall (Stairway) | Williamstown, Mass. | Cram, Goodhue & Ferguson, Architects. |
| U.S. Rubber Building (Corridors) | New York City | Carrere & Hastings, Architects. |

METAWEE. A hard, close-grained marble having pearl white ground mottled with dark blue to black markings. Very hard, non-absorbent. Excellent for toilet purposes. From Danby quarries. The following are representative installations:

| | | |
|---|---|---|
| Samaritan Hospital | Philadelphia, Pa. | Amos H. Barnes, Architect. |
| Administration Building | Merion, Pa. | Paul P. Cret, Architect. |
| Mt. Sinai Hospital | Philadelphia, Pa. | Magaziner, Eberhard & Harris, Architects. |
| Seidman Mortgage Bldg. | Cleveland, Ohio | W. S. Ferguson Co., Architects. |
| Temperance Hotel | Niagara Falls, N. Y. | Fred Allen, Architect. |

NESHOBE GRAY. Quarried in West Rutland. A bluish gray, mottled and veined marble. It has been successfully used for toilets in commercial and manufacturing buildings.

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

NORTHERN IVORY. Quarried in Florence, Vermont. A hard marble with pronounced ivory background and attractive markings. Slabs over 3.6 in width will carry somewhat heavier markings than are typical of this variety. The following contracts have been executed in this material.

| | | |
|---|---|---|
| Forsyth Dental Infirmary | Boston, Mass. | E. T. P. Graham, Architect. |
| First National Bank | Canton, Ohio | Frank L. Packard, Architect. |

NORTHERN WHITE. A hard, pearl white, non-absorbent marble quarried at Florence, Vermont. Well suited for toilet rooms. The sizes are not limited. It has found favor wherever used.

OLYMPIAN WHITE. From the Danby (Vermont) quarries. Is a hard, non-absorbent marble with green clouding. Particularly recommended for wainscoting in corridors and toilet rooms.

OLIVO. A clouded green marble from the West Rutland (Vermont) quarries. Effective for small columns and for pilasters and other interior decorative purposes. There is no limit to width or length of slabs but the thickness of the layer prevents the furnishing of columns over 12 to 14 inches in diameter. Olivo has been used in connection with other marbles in the following:

| | | |
|---|---|---|
| Holy Cross Mausoleum | San Francisco, Calif. | Western States Mausoleum Co., Architects. |
| Eastman Kodak Building (Panels) | Rochester, N. Y. | McKim, Mead & White, Architects. |
| First National Bank | Denver, Colo. | F. E. Edbrooke, Architect. |

Olivo has also found favor in the English market.

PINK LEPANTO. Quarried at Bluff Point, N. Y. A mottled, dark pink marble tinged in places with gray. Very hard and non-absorbent. Excellent for base and for toilets in public buildings or manufacturing plants. Can be produced in reasonable sizes and quantities. Pink Lepanto has been used in the following:

| | | |
|---|---|---|
| City and County Building (Courtrooms). | Pittsburgh, Pa. | E. B. Lee & Palmer, Hornbostel & Jones, Architects. |
| Curtis Publishing Co. Building (Toilets) | Philadelphia, Pa. | E. V. Seeler and Roberts & Co., Architects. |
| Stock Exchange Building (Exchange Room) | Philadelphia, Pa. | Horace Trumbauer, Architect. |
| Hamilton County Court House (Courtrooms) | Cincinnati, Ohio | Rankin, Kellogg & Crane, Architects. |
| Hotel McDonald (Base) | Edmonton, Alberta | Ross & McDonald, Architects. |
| Société St. Sulpice, Library (Base) | Montreal, Quebec | Eugene Payette, Architect. |
| Buffalo Athletic Club. | Buffalo, N. Y. | Edw. Green & Sons, Architects. |

PINK LEPANTO VEINED. The same marble as above (Pink Lepanto) but sawed across the beds. It is thought by many that this method of sawing adds interest to this variety.



The Temple of Justice, Olympia, Wash. An attractive combination of Tokeen and Gravina
Wilder & White, Architects

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

PITTSFORD ITALIAN. Quarried in Florence, Vermont. A very hard, close-grained marble with grayish cloudings. Pittsford Italian has been installed in the following buildings:

| | | |
|---|---|---|
| West Philadelphia High School | Philadelphia, Pa. | J. Horace Cook, Architect. |
| Pantlind Hotel | Grand Rapids, Mich. | Warren & Wetmore, Architects. |
| Community Mausoleum | Easton, Pa. | Edward Leber, Architect. |
| Court Square Building | Springfield, Mass. | E. C. and G. C. Gardner, Architects. |
| Worthington Building | Springfield, Mass. | Brown & Von Beren, Architects. |

ROYAL ANTIQUE. Quarried at Florence, Vermont. A grayish buff marble with bold wavy markings. Most effective in large slabs and matched panels, where the figure can be displayed, and in columns and pilasters. Monolithic columns of large size can be produced. Carving or fine mouldings should be avoided. Some of the buildings in which this marble has been used are:

| | | |
|---|---|---|
| C. & B. and D. & C. Dock Depots | Cleveland, Ohio | |
| State Capitol (Columns, etc.) | Helena, Mont. | F. M. Andrews & Co., Architects. |
| New York Central Station | Utica, N. Y. | Stem & Fellheimer, Architects. |
| Red Cross Building (Columns) | Washington, D. C. | Trowbridge & Livingston, Architects. |
| State Capitol | Oklahoma City, Okla. | Layton & Smith, Architects. |
| State Capitol (Columns) | Jefferson City, Mo. | Tracy & Swartwout, Architects. |
| Kennedy Building | Tulsa, Okla. | A. W. Black & Sons, Architects. |
| Northern Hotel | Billings, Mont. | Link & Haire, Architects. |
| Lewis Building (Entrance) | Montreal, Quebec | Kenneth G. Rea, Architect. |

SECOND STATUARY. From the West Rutland quarries. Has a cream white background, usually with faint but sharp colorings of green or gray. Used quite extensively in memorials and in buildings when a choice white marble is desired. There is no limit as to size and it can be produced in reasonable quantities. Second Statuary has been furnished for the following buildings:

| | | |
|---|---|---|
| North American Building (Entrance) | Chicago, Ill. | Holabird & Roche, Architects. |
| Ritz-Carlton Hotel (Toilets and base) | Philadelphia, Pa. | Warren & Wetmore and Horace Trumbauer, Architects. |
| Eastman Kodak Co. Building | Rochester, N. Y. | McKim, Mead & White, Architects. |
| Ford Building (Entrance) | Detroit, Mich. | Albert Kahn, Architect. |
| First National Bank | Pittsburgh, Pa. | D. H. Burnham & Co., Architects. |
| Blackstone Hotel | Chicago, Ill. | Marshall & Fox, Architects. |

STANDARD GREEN. A heavy green marble from West Rutland (Vermont) quarries. Effective for corridor wainscot where a dark effect is desired at a moderate price.

STRIPED BROCADILLO. Produced from the West Rutland (Vermont) quarries. A striped green and white marble. The veins are much wider than Listavena and more like bands of color. The color of the veins is somewhat darker than in Listavena and the white background is lighter, producing a sharper contrast. Suitable for corridor wainscot where

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

the slabs do not exceed five feet in width. Very effective for pilasters and columns. There is no limit as to length. The following buildings contain typical installations of this marble:

| | | |
|---|---|---|
| Swetland Building (Corridor base) | Cleveland, Ohio | Searles, Hirsch & Gavin, Architects. |
| City Hall (Pilasters in Council Chamber) | Trenton, N. J. | Spencer Roberts, Architect. |
| Government Printing Office (Columns) | Washington, D. C. | D. H. Burnham & Co., Architects. |
| National Savings & Trust Co. (Safety Deposit Department) | Washington, D. C. | Appleton P. Clark, Jr., Architect. |
| Cross Keys Theatre | Philadelphia, Pa. | W. H. Hoffman, Architect. |
| City Hall | Hartford, Conn. | Davis & Brooks, Architects. |
| Chester 12th Building | Cleveland, Ohio | H. T. Jeffrey & Son, Architects. |

Striped Brocadillo has also found its way into the English market through its use in Buckingham Palace.

ORIENTAL. Quarried at Swanton, Vermont. A mottled red marble of very rich color. Very hard and takes a high polish. Most satisfactory for wainscot, stairs, treads, counter tops, deal plates, drinking fountains and similar uses. Reasonable sizes can be obtained and the quantity is ample.

OLIVE is a mottled greenish gray marble quarried at Swanton. Its uses are the same as Oriental.

JASPER is quarried at Swanton. A mottled red and white marble. Very hard and close grained. Excellent for border and treads. Reasonable sizes and quantities can be produced.

LYONNAISE is also quarried at Swanton. Similar to Jasper but somewhat darker. Effective for base, treads or border. Ample quantity in reasonable sizes.

ROYAL RED is another one of the Swanton marbles. It is rich deep red. The quantity is somewhat limited, also the size of the slabs, but reasonable requirements can be met. Royal Red is very effective in combination with mahogany woodwork. Representative installations of the Swanton marbles in the form of base or floor work are listed below:

| | | |
|---|---|---|
| Phœnix Trust Co. | Philadelphia, Pa. | William Copeland Furber, Architect. |
| State Capitol | Boise, Idaho | Tourtelotte & Hummel, Architects. |
| Society for Savings | Cleveland, Ohio | D. H. Burnham & Co., Architects. |
| U.S. Post Office | Salt Lake City, Utah | James Knox Taylor, Supervising Architect. |
| Majestic Theatre | Seattle, Wash. | E. W. Houghton, Architect. |
| Orpheum Theatre | Seattle, Wash. | Wm. Kingsley, Architect. |
| Breevort Hotel | Chicago, Ill. | Prindeville & Egan, Architects. |
| St. Coleman's Church | Cleveland, Ohio | H. E. Snyder, Architect. |
| St. Agnes Church | Cleveland, Ohio | J. T. Comes, Architect. |
| Office Building | Amsterdam, N. Y. | Stephen Sanford & Sons, Engrs. |

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

TOKEEN. A decorative marble quarried at Tokeen, Alaska. Very dense and hard and takes a high polish. The background is pearl white with gray and black markings. The veining of the slabs is of a character that may be matched with very beautiful effect.

GRAVINA is also quarried at Tokeen. It is a very hard marble and takes a high polish. It is very effective as base and trim in connection with Tokeen.
The Alaska marbles have been used very extensively on the Pacific coast and in many representative buildings elsewhere. The following examples are selected from a long list:

| | | |
|---|---|---|
| State Capitol (Part of corridors) | Boise, Idaho | Tourtelotte & Hummel, Architects. |
| Temple of Justice | Olympia, Wash. | Wilder & White, Architects. |
| L. C. Smith Building | Seattle, Wash. | Gaggin & Gaggin, Architects. |
| Yeon Building | Portland, Ore. | Reed Brothers, Architects. |
| King County Court House | Seattle, Wash. | A. Warren Gould, Architect. |
| Flood Building | San Francisco, Calif. | Morris M. Bruce, Architect. |
| Hobart Building | San Francisco, Calif. | Willis Polk & Co., Architects. |
| Van Nuys Building | Los Angeles, Calif. | Morgan & Walls, Architects. |
| High School | Salt Lake City, Utah | Eldridge & Chesebro, Architects. |
| Ten Eyck Hotel (Lobby) | Albany, N. Y. | Esenwein & Johnson, Architects. |
| New England Telephone Bldg. (First floor corridor) | Springfield, Mass. | R. Clipston Sturgis, Architect. |
| Merchants Bank | Toronto, Ont. | Darling & Pearson, Architects. |
| Finance Building (Entrance lobby) | Philadelphia, Pa. | W. H. Hoffman, Architect. |
| Bankers Trust Building | Boston, Mass. | Densmore & Le Clear, Architects. |
| Rialto Theatre | Omaha, Neb. | John Latenseur & Sons, Architects. |
| Public Market | Omaha, Neb. | Alfred Bloom & Co., Architects. |
| Register & Tribune Building | Des Moines, Iowa | Proudfoot, Bird & Rawson, Architects. |
| First National Bldg. | St. Paul, Minn. | Charles R. Frost, Architect. |
| Metropolitan National Bank Bldg. | Minneapolis, Minn. | Hewett & Brown, Architects. |
| Woodlawn Theatre | Chicago, Ill. | Henry Newhouse, Architect. |
| First National Bank | Ambler, Pa. | John T. Brugger, Architect. |
| Public Auditorium | Cleveland, Ohio. | J. H. McDowell, Architect. |
| Fitzhugh Building | San Francisco, Calif. | P. J. Walker Co., Architects. |

VENOSO. A heavily veined marble with cream background from the Florence (Vermont) quarries. Exceedingly hard and non-absorbent. Used for wainscot, balustrades and for toilet rooms. Slabs six feet across the vein can be produced and the supply is usually ample. Also used with very good effect for floors and treads. From the many contracts executed in Venoso the following examples are selected:

| | | |
|---|---|---|
| Community Mausoleum | Cincinnati, Ohio | J. F. Shelblessy, Architect. |
| Hotel Traymore (Floor in lobby) | Atlantic City, N. J. | Price & McLanahan, Architects. |
| Book Building | Detroit, Mich. | Louis Kamper, Architect. |
| Masten Park High School | Buffalo, N. Y. | Esenwein & Johnson, Architects. |
| Kauffman Stores | Pittsburgh, Pa. | Janssen & Abbott, Architects. |
| Halle Bros. Department Store | Cleveland, Ohio. | Henry Bacon, Architect. |
| Loew's Theatre | Montreal, Quebec | Thomas Lamb, Architect. |
| College of Agriculture | Syracuse, N. Y. | E. Hollenbeck, Architect. |

GRADES OF VERMONT MARBLE FOR INTERIORS—*Continued*

VERDOSO. A variegated green marble from the West Rutland (Vermont) quarries suitable for base and trim in combination with other varieties. It has been so used in the following buildings:

| | | |
|---|---|---|
| Putnam Building (Base in corridors) | Davenport, Iowa | D. H. Burnham & Co., Architects. |
| U.S. Post Office (Base) | Elizabeth, N. J. | James Knox Taylor, Supervising Architect. |
| State Capitol (Base) | Helena, Mont. | F. M. Andrews & Co., Architects. |
| Turks Head Building | Providence, R. I. | Howell & Stokes, Architects. |
| Union Station | Galveston, Texas | F. Merritt, Chief Engineer. |
| Casey Hotel | Scranton, Pa. | Charles R. Weatherhogg, Architect. |
| Keith's Theatre | Syracuse, N. Y. | T. W. Lamb, Architect. |
| Community Mausoleum | Waverly, N. Y. | C. W. Smith, Architect. |

VERMONT VERDE ANTIQUE. Quarried at Roxbury, Vermont. A hard variegated dark green and white marble. Universally approved for base, shop fronts, counters and other places where a highly decorative, non-absorbent marble is desired. Typical installations may be seen in any city.

WESTLAND CIPPOLINO. A very strikingly veined marble from the West Rutland (Vermont) quarries. Used for bank screens, decorative panels and columns. The deposit is not extensively worked. Information regarding quantity and sizes available will be furnished on application. Cippolino has been employed in portions of the following buildings:

| | | |
|---|---|---|
| U.S. Post Office | Asbury Park, N. J. | James Knox Taylor, Supervising Architect. |
| The Breakers | Atlantic City, N. J. | V. B. Smith, Architect. |
| Security Trust Co. | Pottstown, Pa. | Lachman & Murphy, Architects. |
| First National Bank | West Chester, Pa. | L. C. Baker, Architect. |
| First National Bank | Potsdam, N. Y. | J. Mills Platt, Architect. |

WESTLAND CREAM PAVONAZZO. This marble has a pink or flesh colored background with bright green markings. The same remarks apply as to Westland Cippolino. This marble has been employed in the following buildings:

| | | |
|---|---|---|
| Hotel Traymore (Stairs to basement) | Atlantic City, N. J. | Price & McLanahan, Architects. |
| Chisholm Mausoleum | Portland, Maine | M. M. Stophlet, Architect. |
| Slocum College of Agriculture | Syracuse, N. Y. | E. Hollenbeck, Architect. |
| Lehigh Valley Trust Co. | Allentown, Pa. | Ruhe & Lange, Architects. |
| Lewis County Trust Co. | Lowville, N. Y. | Kinne & Frank, Architects. |

## Detailing of Interior Marble

THE uses of interior marble are varied and, to secure the best results, considerable care in detailing is necessary. The following plates cover a wide range, and it is hoped they will be found useful.

Plate VII shows two ways of treating office building corridors, and the trim may be of wood or metal in either case. Note the air space back of the marble. The detailing of marble at doors and windows where a more elaborate effect is wanted may follow one of the sections on Plate VIII.

Toilet enclosures suited to almost any conditions are shown on Plate IX. The tendency at present is to omit metal rail and legs. Shower baths of two different types appear on Plate X. The one without lead pan is suited only to places where a possible leak would not be harmful. Where the lead pan is used, this should be drained into waste outlet. Shower baths should always be pointed with a mixture of glycerine and litharge.

Alterations of old buildings sometimes require the use of marble stairs on wood supports as shown on Plate XI. It is not a type of construction to be recommended otherwise.

Marble on concrete, as shown by Plate XII, is very common. It will be noted that by building the concrete in this way no checking of string over treads and risers is necessary.

Construction shown on Plate XIII was used on the Dallas City Hall, C. D. Hill & Co., Architects. Here, too, the steel work is detailed in such a way as to avoid the expensive checking of marble string. It should be noted that at the start of the flight where circular risers occur, the regular stair construction should be omitted and the marble supported on masonry. This is to avoid the necessity for finishing the back of the marble to accommodate the curved steel.

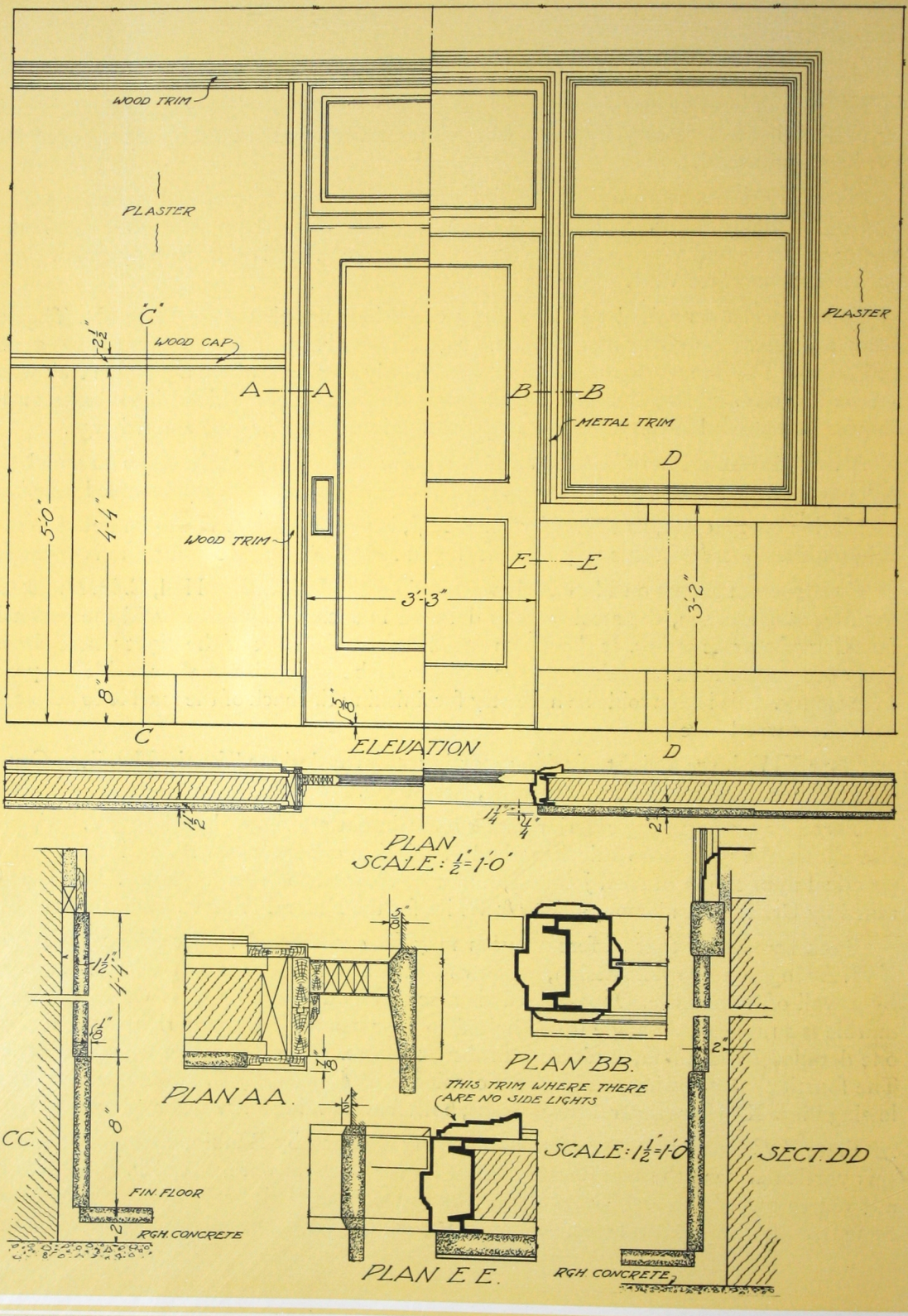
Plate XIV shows a flight of self-supporting stairs as designed for the Hamilton County Court House, Rankin, Kellogg & Crane, Architects.

Three ways of treating exterior angles on wainscot are shown by Plate XV. This plate also shows the most economical method of jointing curved work. As an instance of the practical application of such jointing, a marble information desk is shown. This is as detailed by Graham, Anderson, Probst & White for the Federal Reserve Bank, Kansas City.

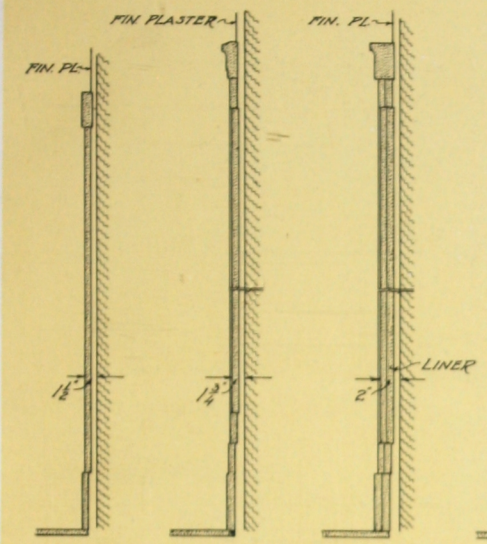
Bank screens of four different types may be constructed in accordance with Plate XVI. A Hoggson Brothers design, as shown on the top of the page on the left, is supported by a wall of hollow tile. Opposite this is a screen as detailed by Cass Gilbert. Here the marble is supported on angle irons, bolted to floor beams. The lower right-hand design is one detailed by Graham, Anderson, Probst & White. The soffit of the ledge is plastered. The fourth type, showing solid marble cornice, is as detailed by C. R. Peddle. On the following Plate XVII are several check desks, both free standing and supported by wall work.

Plate XVIII shows a type of vaulted ceiling designed by Rankin, Kellogg & Crane. In this particular case the marble was set on forms; anchors were placed in the joints and allowed to project several inches above the top surface. This surface was plastered with cement, water proofed and then the structural concrete was poured around the anchors.

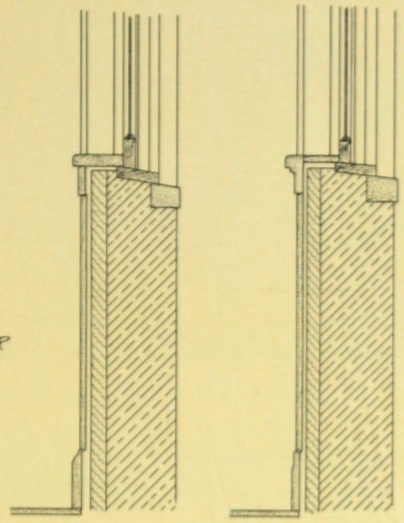
# CORRIDOR TREATMENTS FOR OFFICE BUILDINGS



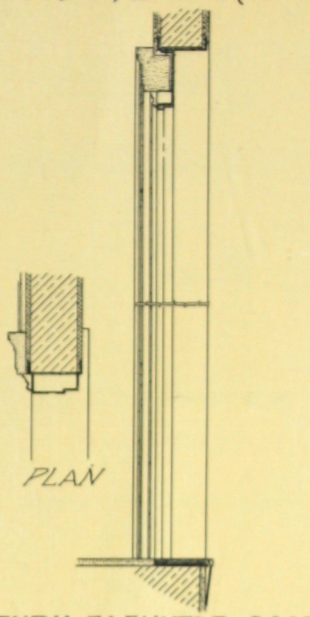
# SECTIONS THROUGH WAINSCOT, WINDOWS, DOORS



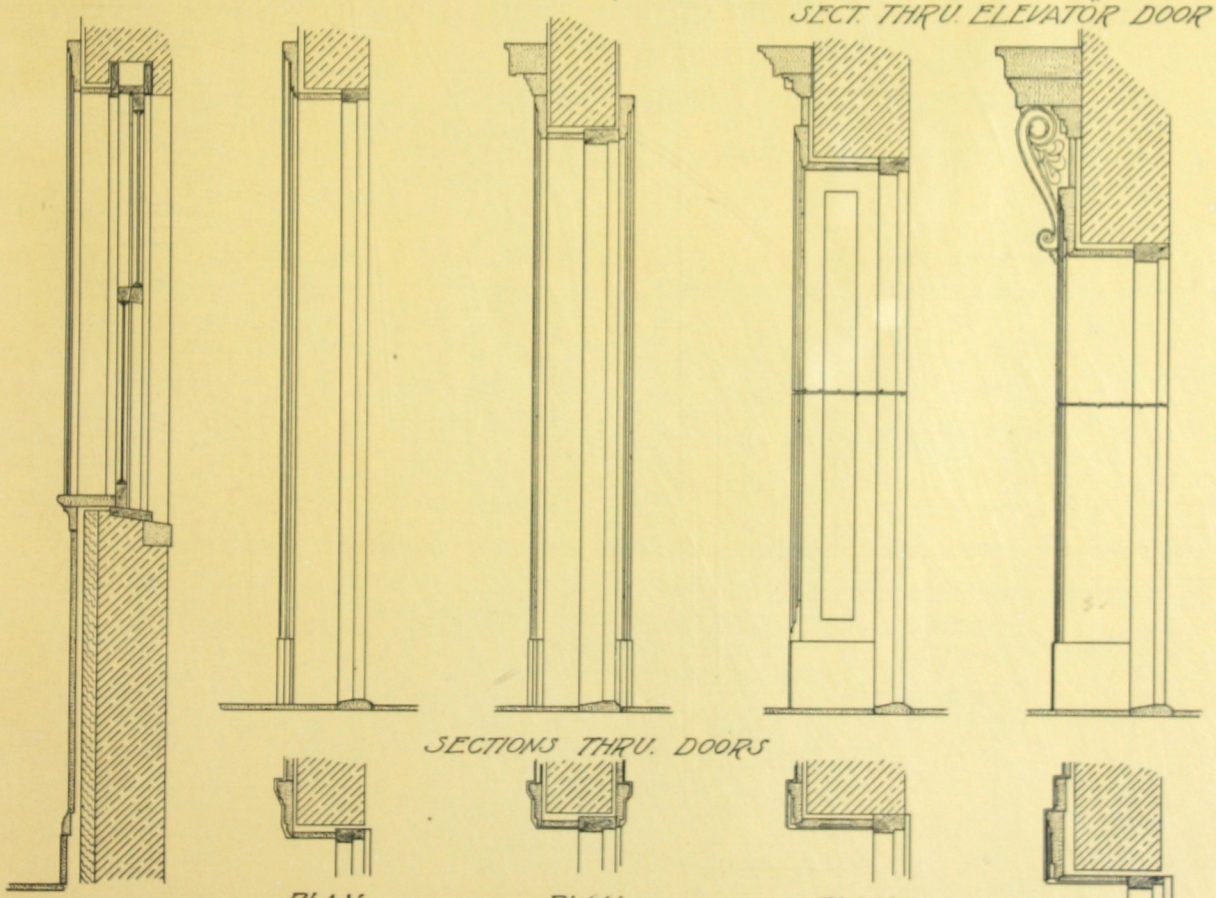

WAINSCOT SECTIONS



SECTIONS THRU. WINDOWS




SECT. THRU. ELEVATOR DOOR



SECTIONS THRU. DOORS

SECTION THRU. WINDOW

PLAN

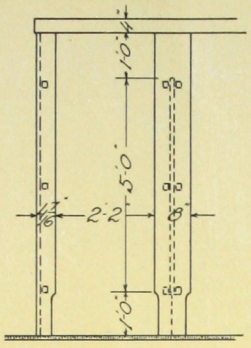
PLAN

PLAN

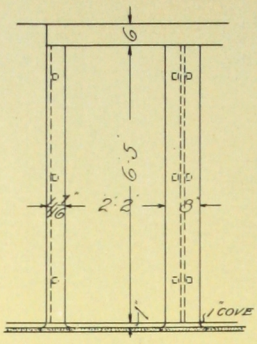
PLAN

SCALE: ONE HALF INCH EQUALS ONE FOOT

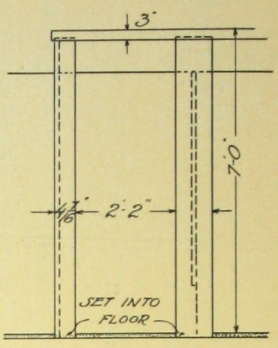
# WATER CLOSETS AND URINALS



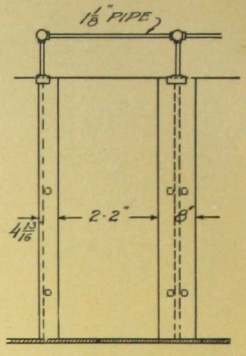

ELEVATION



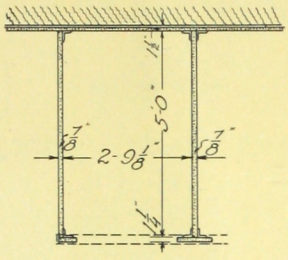

ELEVATION



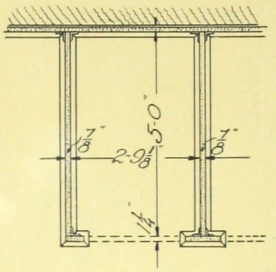

ELEVATION



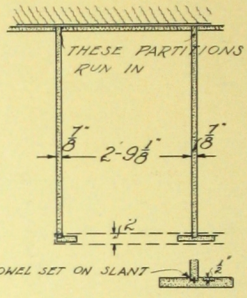

ELEVATION



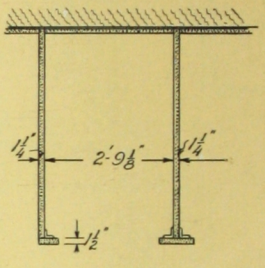

PLAN



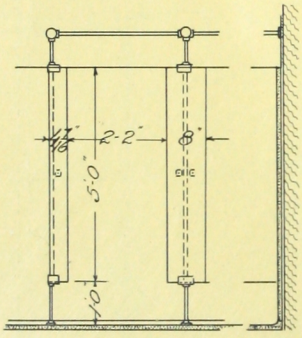

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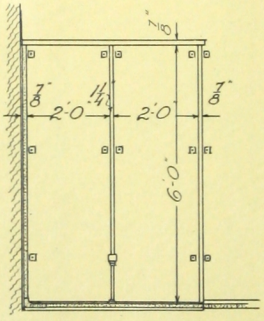

PLAN



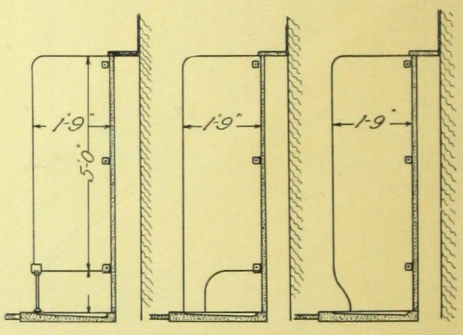

PLAN




ELEVATION

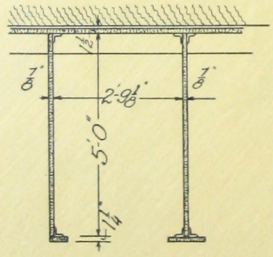



ELEVATION

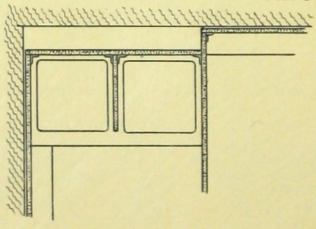



SECT. SECT. SECT.

SECTIONS SHOWING TREATMENT OF URINAL PARTITIONS



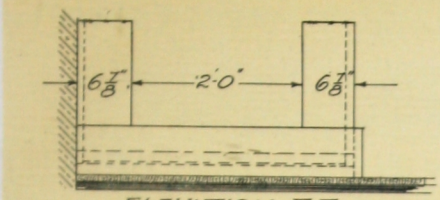

PLAN



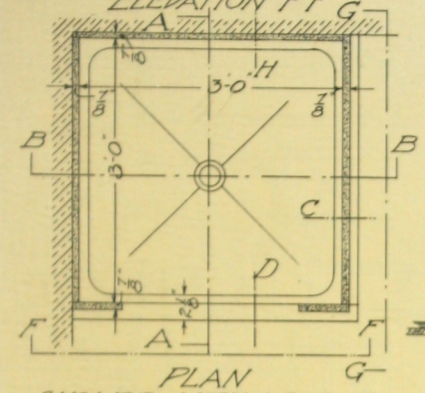
PLAN

SCALE - ONE QUARTER INCH EQUALS ONE FOOT

# SHOWER CONSTRUCTION

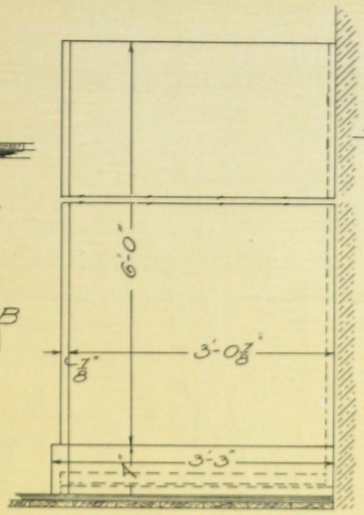



ELEVATION FF G



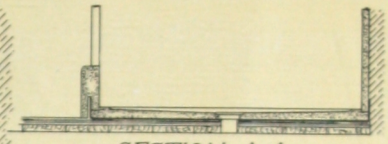

PLAN

SHOWER WITH LEAD PAN

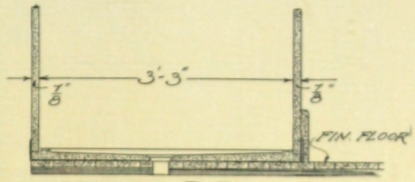



ELEVATION GG

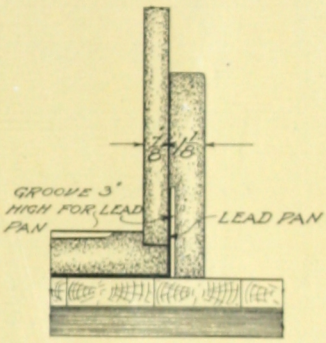
SET ON WOOD FLOOR



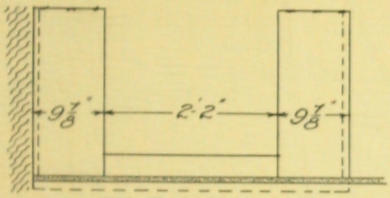
SECTION AA



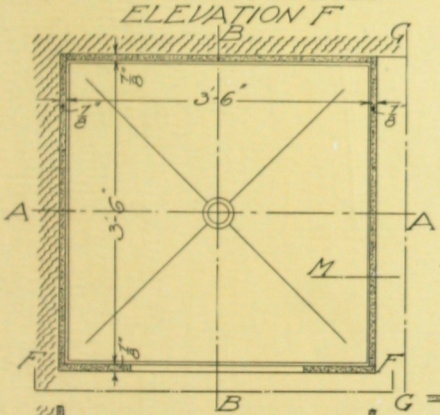

SECTION BB

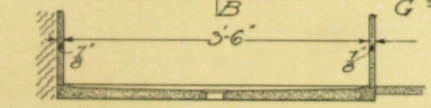



SECT. C

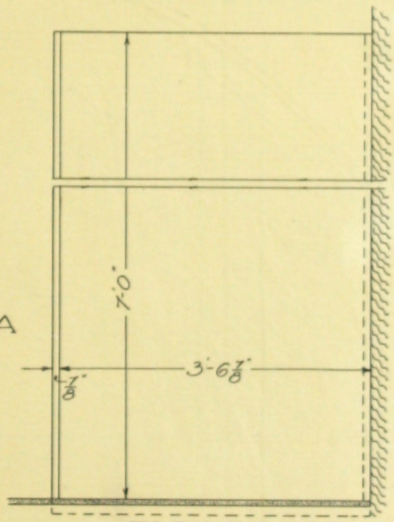



ELEVATION F

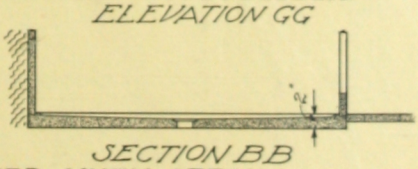


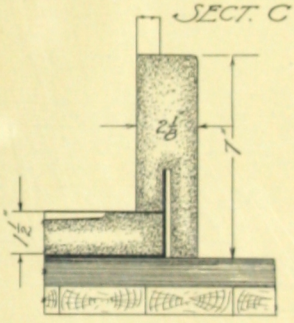

SECTION AA



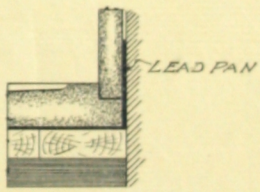

ELEVATION GG



SECTION BB

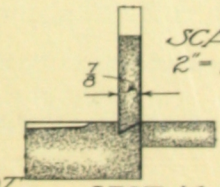



SECT. D




SECT. H

THIS DETAIL CAN BE USED, WHEN SPECIAL WATERPROOFING IS NOT NECESSARY



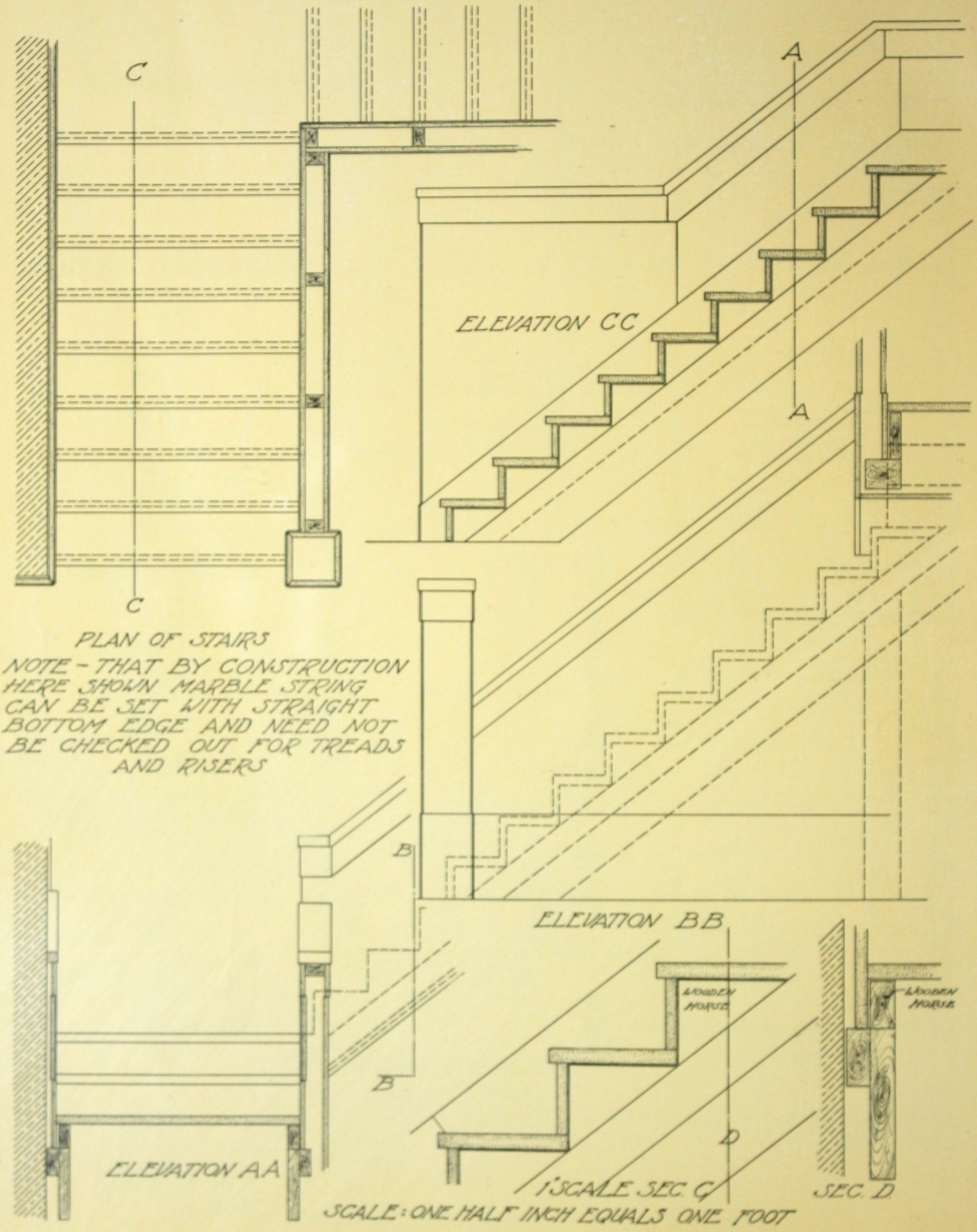

SECT. M

SCALE: 2"= 1'-0"

SCALE: ONE HALF INCH EQUALS ONE FOOT

# DETAILS OF CONSTRUCTION

## MARBLE TREADS, RISERS, BALUSTRADE, WALL STRING AND WAINSCOT ON WOODEN FRAME



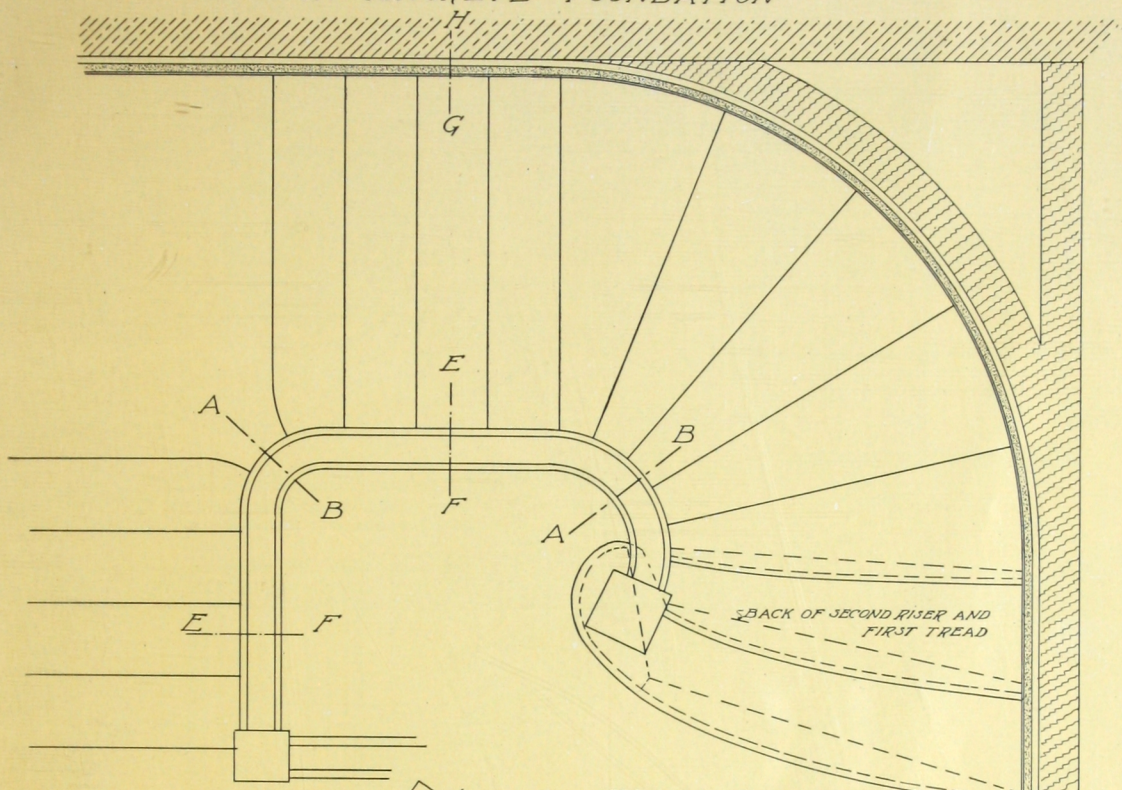

PLAN OF STAIRS

NOTE - THAT BY CONSTRUCTION HERE SHOWN MARBLE STRING CAN BE SET WITH STRAIGHT BOTTOM EDGE AND NEED NOT BE CHECKED OUT FOR TREADS AND RISERS

SCALE: ONE HALF INCH EQUALS ONE FOOT

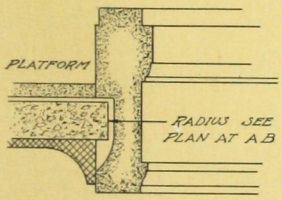
# DETAILS OF CONSTRUCTION

## MARBLE TREADS, RISERS, BALUSTRADE STRING, WALL STRING, WAINSCOT ON CONCRETE FOUNDATION



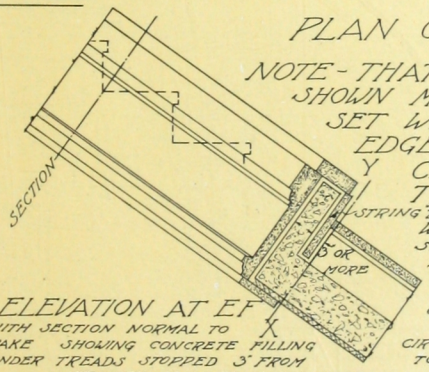

PLAN OF STAIRS

NOTE - THAT BY CONSTRUCTION HERE SHOWN MARBLE STRING CAN BE SET WITH STRAIGHT BOTTOM EDGE AND NEED NOT BE CHECKED OUT FOR TREADS AND RISERS.




VERTICAL SECT AT AB

SHOWING STRING ON CURVE MADE SOLID

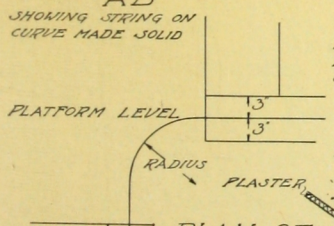


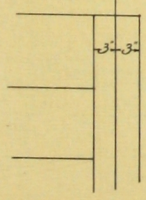

ELEVATION AT EF

WITH SECTION NORMAL TO RAKE SHOWING CONCRETE FILLING UNDER TREADS STOPPED 3" FROM STRINGER SO AS TO ALLOW MARBLE TO RUN DOWN SEE ELEVATION XY

WHERE CIRCULAR WORK OCCURS AS AT START OF STAIRS: OMIT WHEN POSSIBLE THE REGULAR STAIR CONSTRUCTION AND SUPPORT THE CIRCULAR TREADS AND RISERS ON TILE OR CONCRETE BUILT UP AS MARBLE IS SET.

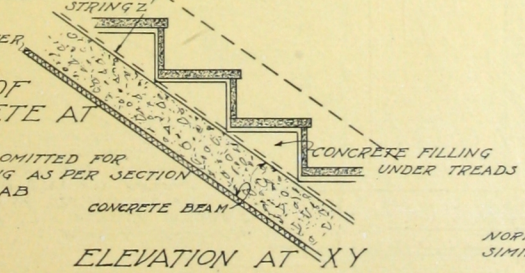
CIRCULAR RISERS AND TREADS TO BE MADE STRAIGHT ON BACK



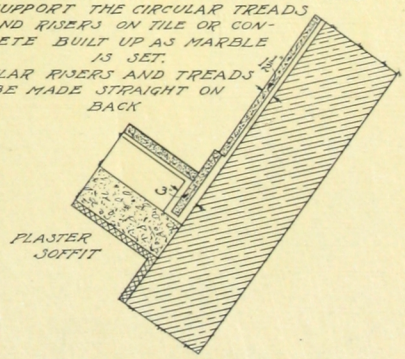




PLAN OF CONCRETE AT AB

CONCRETE OMITTED FOR SOLID STRING AS PER SECTION AB




ELEVATION AT XY



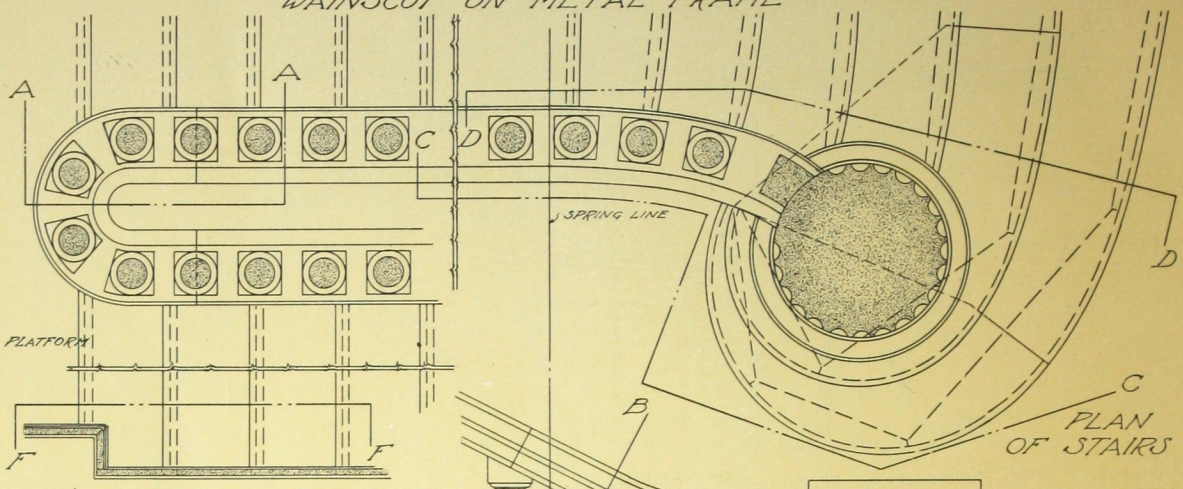

SECTION GH

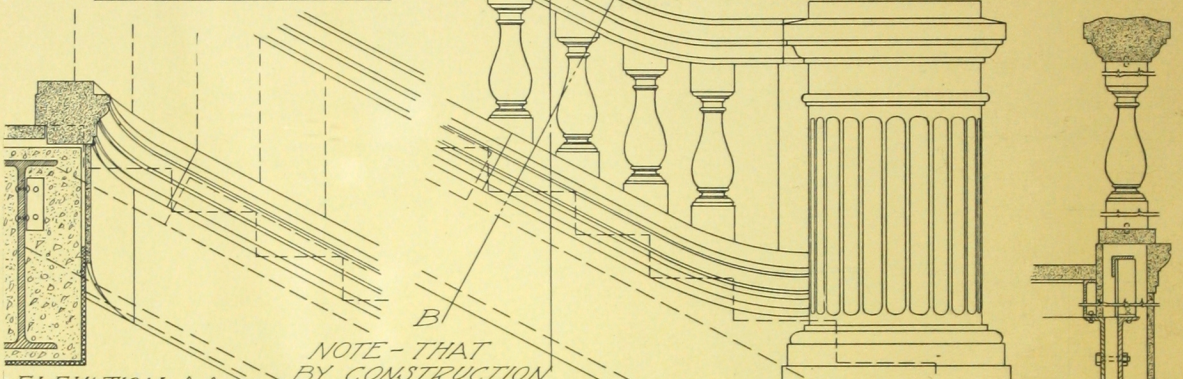
NORMAL TO RAKE SHOWING CONSTRUCTION SIMILAR TO THAT AT ELEVATION EF AND SECTION XY

SCALE: ONE HALF INCH EQUALS ONE FOOT

# DETAILS OF CONSTRUCTION

## MARBLE TREADS, RISERS, BALUSTRADE STRING, WALL STRING, AND WAINSCOT ON METAL FRAME

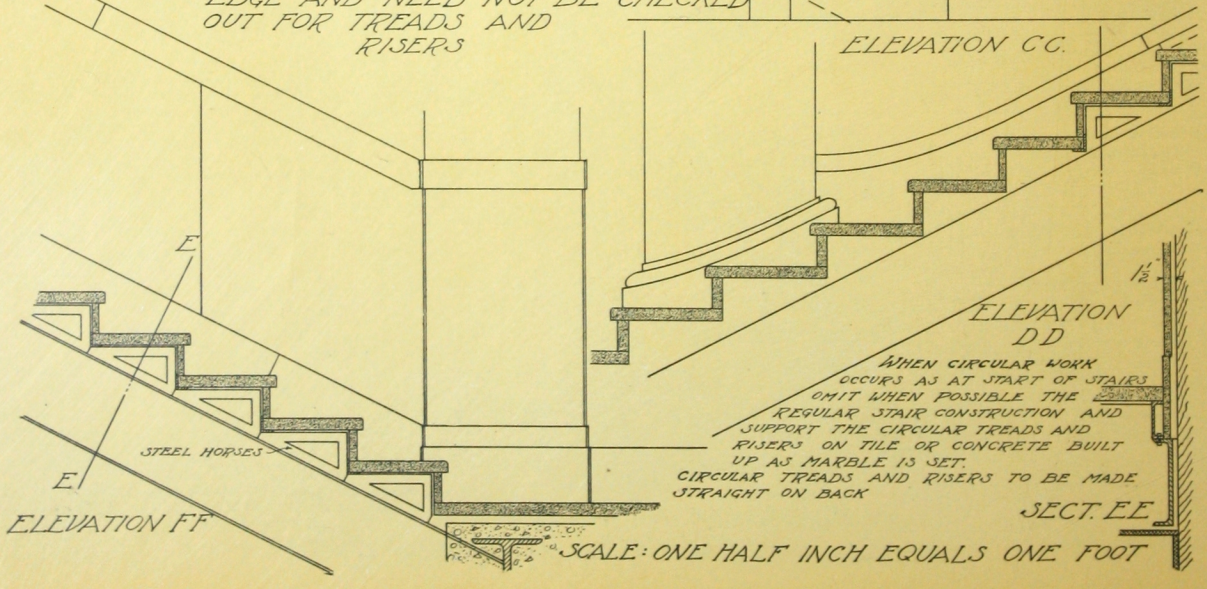



ELEVATION AA
SHOWING STRING ON CURVE MADE SOLID, STEEL OMITTED FOR SOLID STRING

NOTE - THAT BY CONSTRUCTION HERE SHOWN MARBLE STRING CAN BE SET WITH STRAIGHT BOTTOM EDGE AND NEED NOT BE CHECKED OUT FOR TREADS AND RISERS

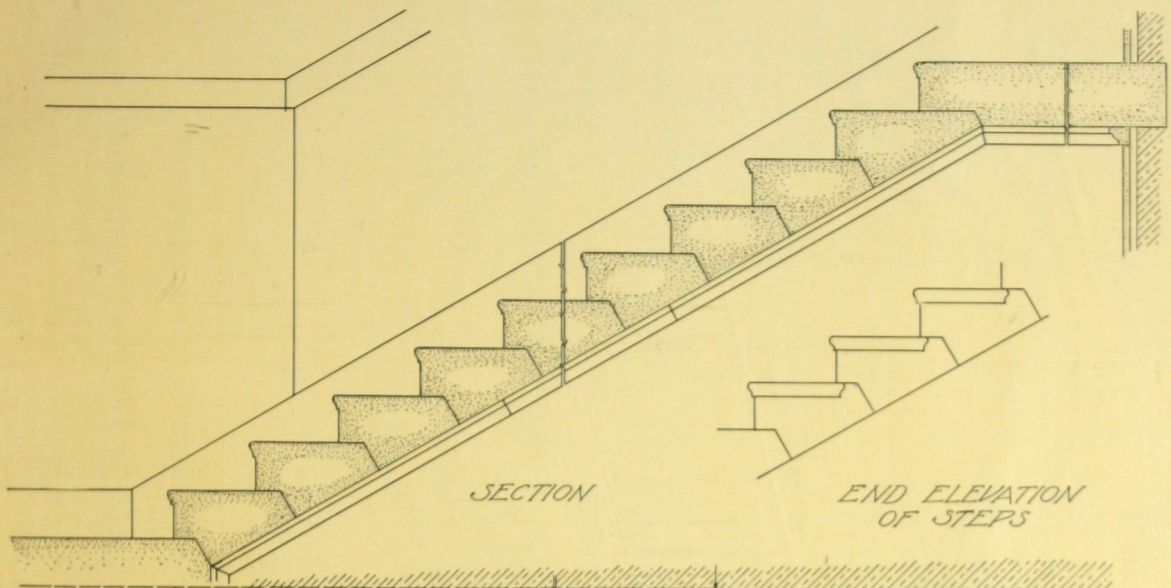
SECT. BB

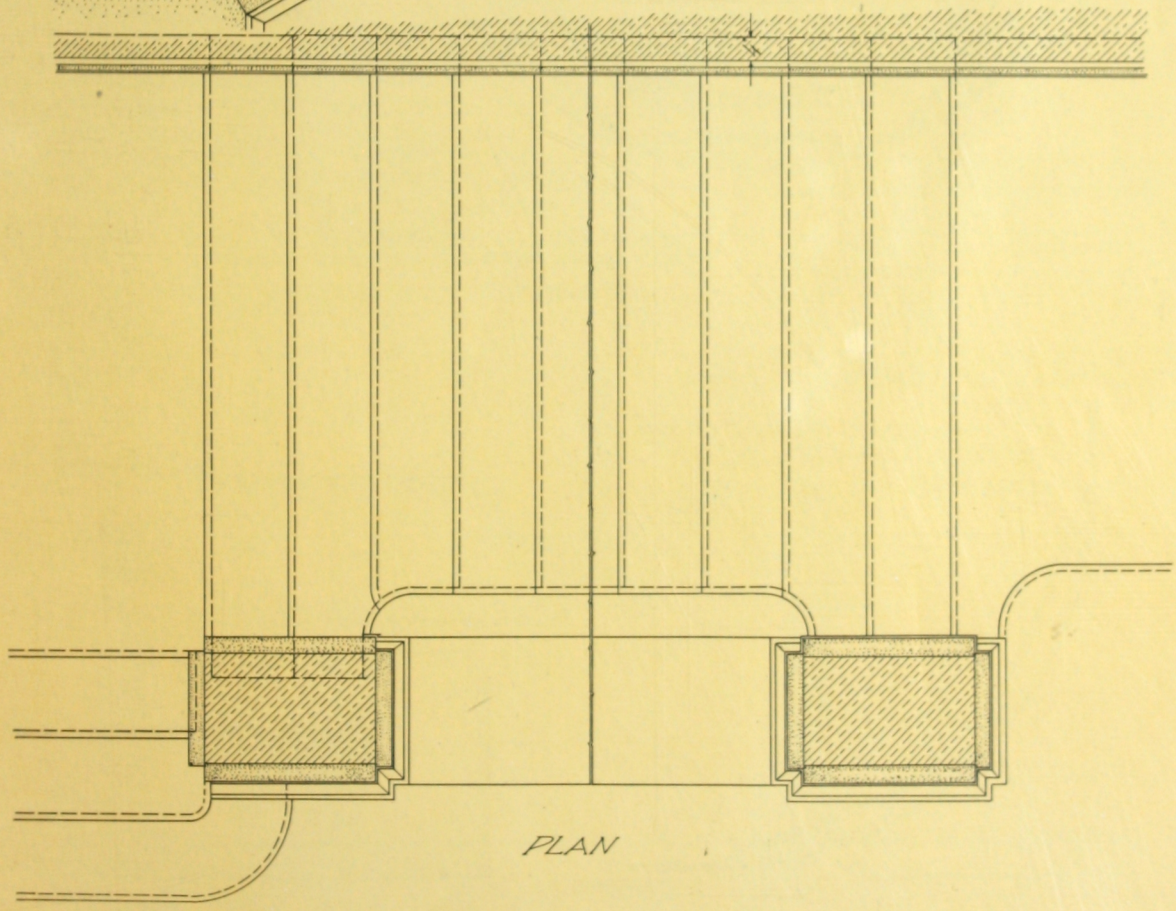



ELEVATION FF

SCALE: ONE HALF INCH EQUALS ONE FOOT

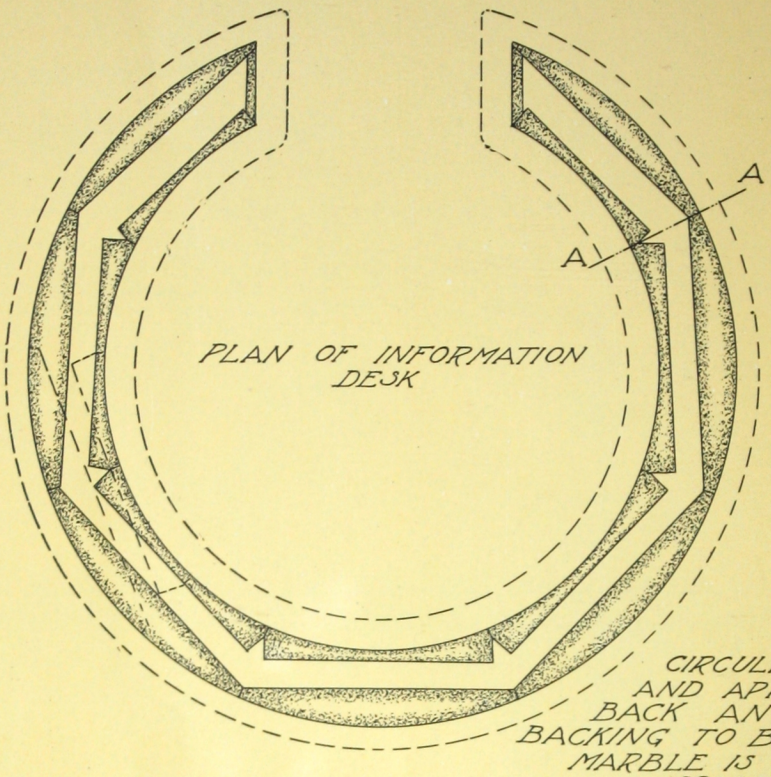
# SELF SUPPORTING STAIRS

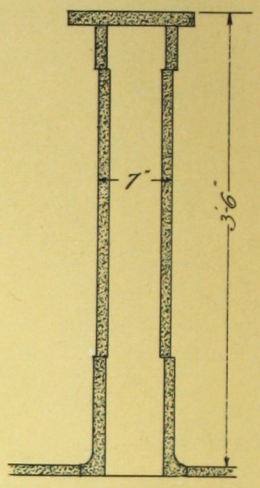



SCALE: ONE HALF INCH EQUALS ONE FOOT

# CIRCULAR WORK AND CORNERS

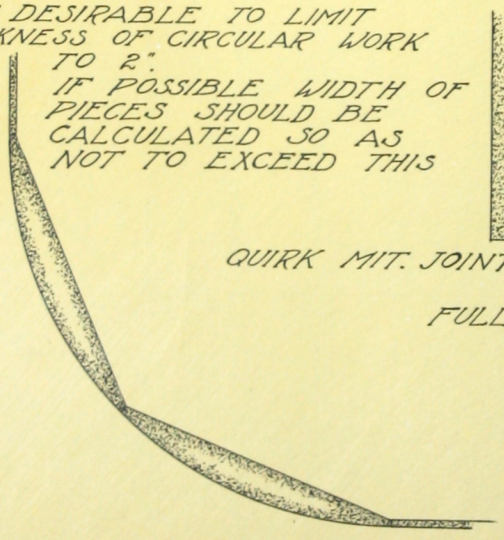


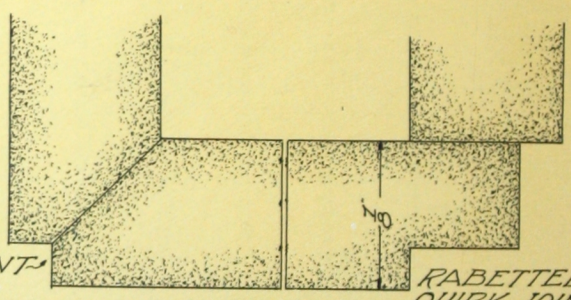




SECTION A A

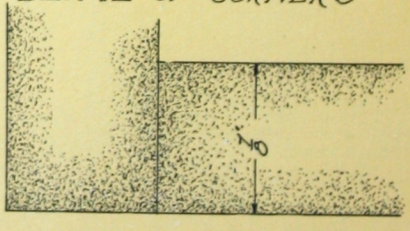
CIRCULAR COVE, BASE, DIE AND APRON STRAIGHT ON BACK ANY NECESSARY BACKING TO BE BUILT AS MARBLE IS SET.
SCALE - $\frac{3}{4}$" = 1 FOOT

IT IS DESIRABLE TO LIMIT THICKNESS OF CIRCULAR WORK TO 2". IF POSSIBLE WIDTH OF PIECES SHOULD BE CALCULATED SO AS NOT TO EXCEED THIS



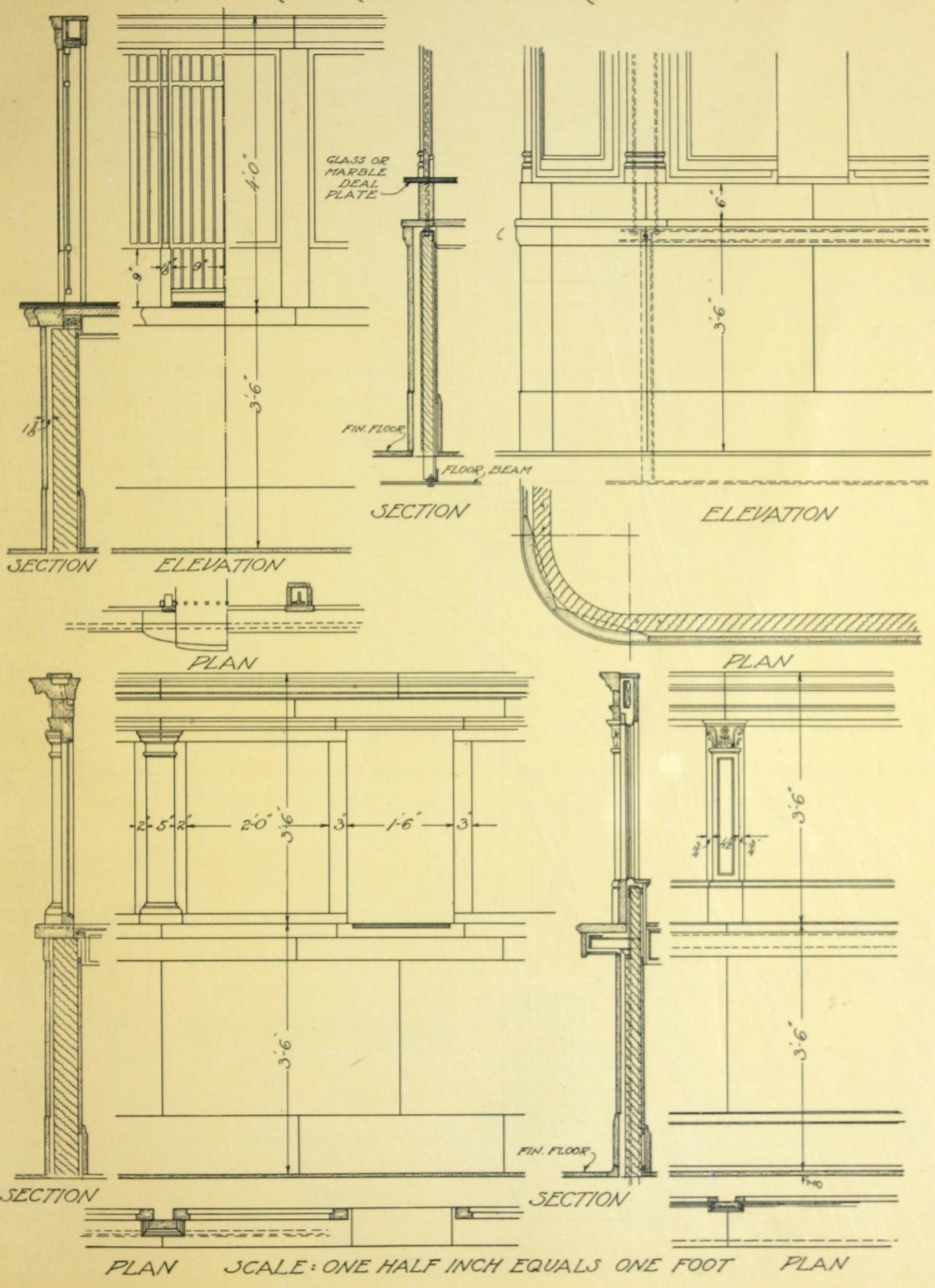



FULL SIZE DETAIL OF CORNERS

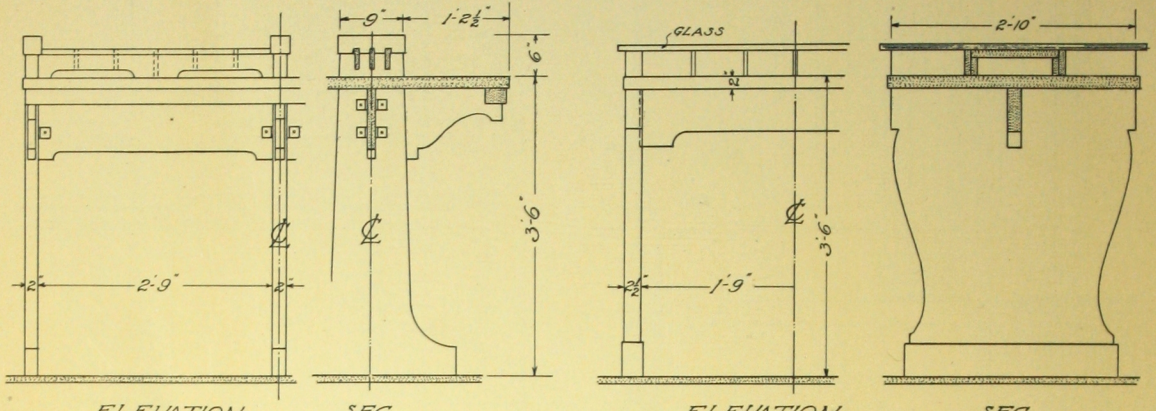



FULL SIZE BUTT JOINT

# BANK SCREEN CONSTRUCTION

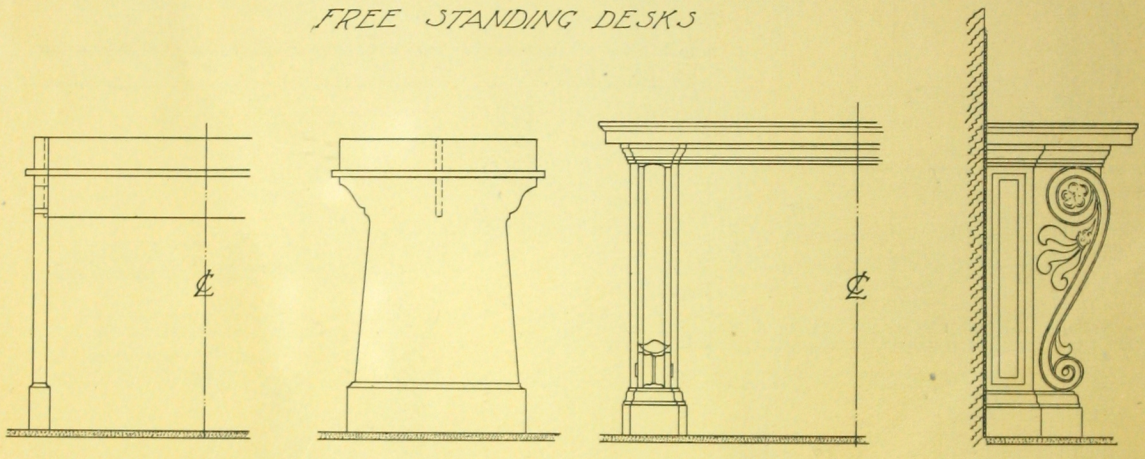


# CHECK DESKS



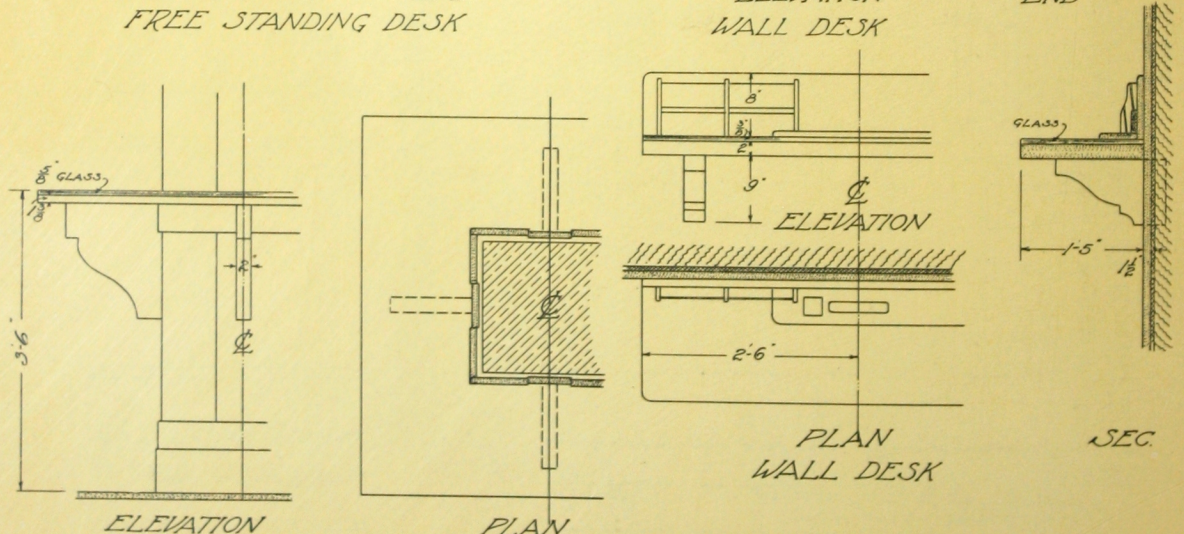

ELEVATION SEC. ELEVATION SEC.

FREE STANDING DESKS



ELEVATION END ELEVATION END

FREE STANDING DESK WALL DESK

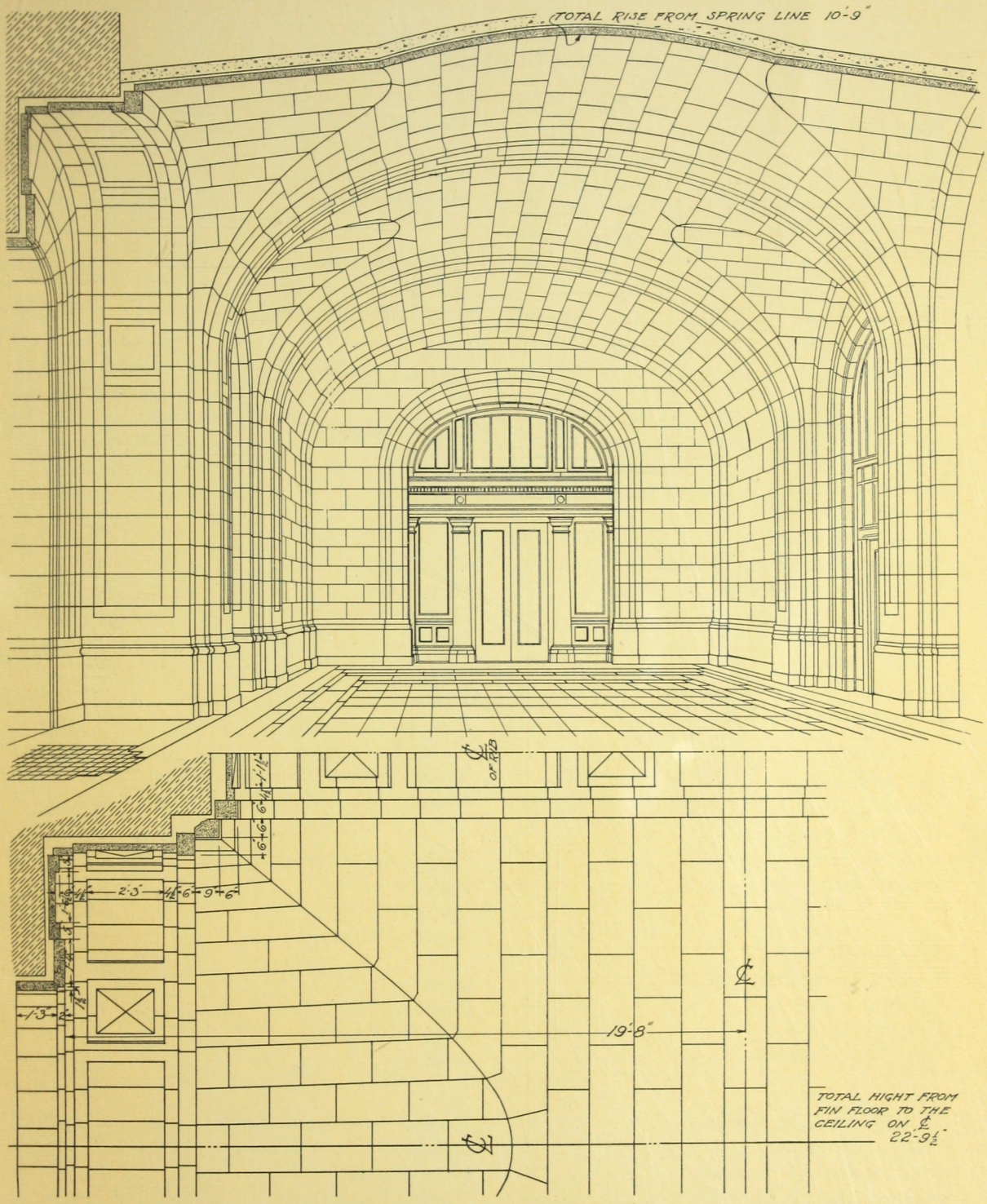



ELEVATION PLAN PLAN SEC.

DESK AROUND PIER WALL DESK

SCALE-ONE HALF INCH EQUALS ONE FOOT.

# VAULTED CEILING CONSTRUCTION




SCALE: ONE HALF INCH EQUALS ONE FOOT

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